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1977 Performance of Field Crop Varieties

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by Charles R. Graves

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1977

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OF FIELD CROP VARIETIES

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by

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RECOMMENDED CROP VARIETIES
Listed alphabetically

Corn Hybrids

White—Full Season—FFR 929W, Funk G-4747W, Golden Harvest H-2660W, Princeton SX910, Tenn. 505, Zimmerman Z-11W.

Yellow—Full-Season—DeKalb XL394, Funk G-4848, Pioneer brand 3145, Pioneer brand 3147, McNair X300, Tenn. 606 [1] [2], Tenn. 608.

White—Medium-Season—DeKalb XL390A.

Yellow—Medium-Season—DeKalb XL72B, DeKalb XL80, DeKalb XL 75, FFR 744C, Funk G-4520, P.A.G. SX17A, Pioneer brand 3369A, Pioneer brand 3184, Princeton SX840.

Yellow—Early-season—Funk G-4525, Funk G-4507, McCurdy MSX88 [1].

Cotton [3]

Auburn M., Coker 304, Coker 310, Delcot 277, Deltapine 16, Deltapine 55, Hancock, Stoneville 213, Stoneville 256, Stoneville 603.

Oats

Fall-seeded—Coker 66-22, Cumberland.

Wheat

Abe, Arthur, Coker 747, Doublecrop, Oasis [1], McNair 4823, Stoddard.

Barley

Keowee, Volbar.

Rye

Hiwassee.

Alfalfa

Gladiator, Saranac AR, Team, Weevlchek, Williamsburg.

Red Clover

Kenland, Kenstar, Redland.

Soybeans

Bragg[4], Centennial[5], Coker 136, Dare, Essex, Forrest[5], FFR 666, Hill [1], Lee 74, Pickett 71 [5], York.

Grain Sorguhm

Bird Resistant—Funk G-516BR, McCurdy Birds-off 81, McNair 656BR, Pioneer brand B815, RA Bird Go 68.

Non-Bird Resistant—Acco R-1090, Funk G-522, McNair 650, RA 811A.

Burley Tobacco

Burley 21, Burley 37, Burley 49, Burley 64, Ky. 14, MS Bu. 21 X Ky. 10, Va. 509.

Dark Fire-Cured Tobacco

Broad Leaf Madole, Black Mammoth, DF-300, DF-911.

Summer Annuals

Sorghum x Sudangrass crosses—Drip O'Honey, FFR 66, Funk G-78F, Funk G-83F, Graze-n-Bale, Mor Su II, Pioneer brand 988, Sordan 70A, Sudax SX-16, Sudax SX-17, Summergrazer, Sure Graze, Sweet M, Sweet Sioux IV, and Wandergraze.

Sudagrass—Trudan 5

Millets—Gahi-1, Hygrazer, Millex 23, RA Millhy 99, Southgrazer.

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[1] Present plans indicate that these varieties will not be recommended after this year.

[2] Not recommended for grain production except under corn virus conditions.

[3] Cotton results will be given in a later publication.

[4] Recommended for southern tier of counties in Middle and West Tennessee.

[5] Recommended where Race 3 soybean cyst nematodes are a problem.

CHARACTERISTICS OF RECOMMENDED VARIETIES

CORN

Virus Rating of Corn Varieties Recommended for 1978

Hybrid	Tolerance* to corn virus complex
White—Full-Season	
FFR 929W	Med.
Funk G-4747W	Med.-High
Golden Harvest H-2660W	Med.
Princeton SX91	Med.-High
Tenn. 502 [2]	High
Zimmerman Z-11W	Med.-High
Yellow—Full-Season	
DeKalb XL394	High
Funk G-4848	Med.
Pioneer brand 3145	High
Pioneer brand 3147	High
McNair X300	Low
Tenn. 606 [1 2]	Med.-High
Tenn. 608	High
White—Medium-Season	
DeKalb XL390A	Med.
Yellow—Medium-Season	
DeKalb XL72B	High
DeKalb XL80	Low
DeKalb XL75	Med.
FFR 744C	Low
Funk G-4520	Low
P.A.G. SX17A	Med.
Pioneer brand 3369A	Low
Pioneer brand 3184	Med.
Princeton SX840	Low
Yellow-Early-Season	
Funk G-4525	High
Funk G-4507	Low
McCurdy MSX88 [1]	Med.

[1] Present plans indicate that these hybrids will not be recommended after this year.

[2] Not recommended for grain production except under corn virus conditions.

*Hybrids rated lower than medium-high are not recommended under heavy virus conditions.

GRAIN SORGHUM

Bird-resistant varieties

Funk G-516BR—A medium-tall variety of medium to late maturity with open type head.

McCurdy Birds-off 81—A variety of medium maturity, and short plant height with heads medium to open in compaction. This variety has yielded and stood well in the state variety trials.

McNair 656BR—This variety is medium-tall and medium in maturity. It stands well and has been a consistent yielder in the variety trials. This variety has an open type head.

McNair 546—A variety of medium maturity with an open type head. This variety has good standing ability.

Pioneer brand B815—A variety which is tall with medium to open type heads. This variety has been one of the later varieties heading.

RA Bird-Go 68. This bird-resistant variety has been evaluated in the past as Excel Bird-Go 68. RA stands for Ring Around Seed Company. This variety has yielded well for several years in the state variety trials. This variety is medium in maturity and plant height with an open type head.

Non-bird resistant varieties

Acco R-1090—A variety which is medium-tall with medium to open type heads. This variety has been medium in maturity.

Funk G-522—A variety that has performed consistently for several years in the variety tests. It has been medium to late in heading and maturity. It is medium to tall in plant height with a medium to open type head.

McNair 650—A variety which is medium-tall with a medium type head. This variety is medium to late in maturity.

RA 811A—This variety has been evaluated in the past as Excel 811A. This medium-tall variety has a medium type head and is medium to early in maturity.

SOYBEANS

Bragg—A tall-growing, late-maturing variety (Maturity group VII).[1] It matures about 7 days later than Lee (Maturity group VI). Bragg has white flowers and tawny pubescence. It has good seed-holding qualities. Bragg is recommended for the southern tier of counties in Middle and West Tennessee.

Centennial—Centennial matures (Maturity group VI) about the same time as Pickett 71 (Maturity group VI). Plants are tall with tawny pubescence and purple flowers. Seeds are medium in size with a yellow seed coat and black hila. It has resistance to Races 1 and 3 of the soybean cyst nematods, the root-knot nematode **Meloidogyne incognita,** the reniform nematode, and phytophtohora rot. This variety seems to be too late for the Cumberland Plateau.

Coker 136—This variety matures a few days earlier than Lee 74 (Maturity group VI) and a few days later than Forrest (Maturity group V). Coker 136 has gray pubescence with purple flowers. It is similar to Forrest in plant height.

Dare—Dare matures (Maturity group V) about the same as York (Maturity group V). Plants have white flowers and gray pubescence. Seeds are yellow with light brown hilum. It has resistance to purple stain, bacterial pustule, wildlife, and target spot. It is also moderately resistant to phytophthora root-rot. Dare has good seed-holding characteristics but does not hold its seed as well as Lee. This variety tends to hold its leaves after maturity longer than some other varieties.

Essex—An early-maturing variety (Maturity group V) which is short and stands well. It has purple flowers, gray pubescence, and a tawny pod wall. Essex has a high yield potential under good moisture conditions, but it appears to be more sensitive to moisture stress than many of the other varieties evaluated. Essex has not performed well on heavy textured soils. Essex is similar to Dare in seed size, quality, and shatter resistance.

Forrest—Forrest (Maturity group V) is a selection from the cross Dyer X Bragg. Its growth characteristics resemble Bragg (Maturity group VII) but plants mature about 3 weeks earlier. Forrest (Maturity group V) is a few days later in maturity than Dare (Maturity group V). This variety is resistant to root-knot and soybean cyst nematode Race 3. Forrest also has good resistance to bacterial pustule, wildlife, target spot, and is moderately resistant to phytophthora rot. Forrest has white flowers and tawny pubescence. Seed are yellow with a black hilum.

FFR 666—FFR 666 has purple flower, tawny pubescence, and yellow seed with a black hilum similar to Lee. This variety matures about a day earlier than Lee (Maturity group VI) under most planting dates. It has performed similar to Lee 74 in the state variety tests.

Hill—Hill matures (Maturity group V) about 14 days earlier than Hood (Maturity group VI). This variety has resistance to shattering, but not quite so much as Lee. Hill performed well under root-knot nematode conditions.

Lee 74—Lee 74 has resistance to the common foliar diseases bacterial pustule, wildfire, and target spot similar to Lee 68. The variety

has purple flowers, tawny pubescence, and yellow seed with a black hilum similar to Lee 68. This variety is in Maturity group VI. Lee 74 is resistant to root-knot nematode, whereas Lee 68 is not.

Pickett 71—This variety resembles Pickett in plant and seed characteristics. Pickett 71 is resistant to phytophthora rot as well as being resistant to Race 3 soybean cyst namatode. It also has resistance to bacterial pustule, wildfire, and target spot. Pickett 71 has gray pubescence and purple flowers. Seeds are yellow with a black hilum. Pickett 71 has performed similarly to Pickett in the State Variety Trials. Pickett and Pickett 71 are in Maturity group VI.

York—York matures at about the same time as Dare (Maturity group V) and is about 10 days later than Hill. Seeds of York are slightly off-round with a buff hilum and yellow seed coat. York has purple flowers and gray pubescence. York has good seed-holding qualities but not as good as Lee. York has very good resistance to lodging and has yielded well in the State Variety Test.

OATS

Fall-Seeded:

Coker 66-22—This variety has yielded well in the tests and is a few days earlier than Blount. Coker 66-22 has weak straw and lodges more than Blount.

Cumberland—A short, stiff-strawed variety of medium-late maturity. It is slightly more winter hardy than Blount. It has outyielded Blount for grain the last 5 years. Cumberland has good lodging resistance. This variety was tested in previous years as T 60-32 (Experimental).

RYE

Hiwassee—A medium-tall, medium-late maturity, broadleaved variety. Hiwassee is not as uniform in plant growth in the seedling stage as Balbo, but in the mature stage is more uniform than Balbo.

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[1] Varieties have been divided into 10 maturity groups, 00 through VIII. Varieties recommended in Tennessee are from Groups V, VI, and VII. Group V is considered early to medium, Group VI late, and Group VII late to very late. The later these varieties of maturity, Groups V, VI, and VII are planted, the less pronounced is the difference in date of maturity among varieties.

Heads and seeds are larger than Balbo. This variety has good lodging resistance for rye. Because Hiwassee is a tetraploid, some sterility may occur when grown near common (diploid) rye varieties of the same maturity.

BARLEY

Keowee—This variety was selected from the Davie X Hudson cross at Clemson University. Keowee is a six-rowed winter barley with moderate winter hardiness and semiprostrate seedling growth. It has medium-length awns similar to Wade in appearance. Keowee is medium-late in maturity. This variety has performed well in the test for several years.

Volbar—A winter-hardy, six-rowed, tall, rough-awned variety with maturity similar to Harrison and Jefferson. Volbar has yielded well in the state variety test and has resisted lodging. Volbar has slight tolerance to Barley Yellow Dwarf Virus disease.

WHEAT

Abe—This variety is similar in apperance to Arthur. Abe may be distinguished from Arthur 71 and Arthur by its blue-green foliage from young plants in the boot state and by its longer awnlets. Abe has the same resistance to stem rust, powdery mildew, loose smut, and soil-borne mosaic similar to Arthur. This variety has yielded slightly more than Arthur or Arthur 71 in the state trials.

Arthur—A very early, winter-hardy, soft red winter variety with good straw strength. Arthur has good test weight and is resistant to certain races of powdery mildew, and moderately resistant to leaf rust, stem rust, and loose smut. Arthur has been relatively free of disease for the past 2 years in the State Variety Test. Arthur is resistant to most races of Hessian Fly. However, Arthur, like Harrison barley, is sensitive to acid soil (low pH) and for best performance it should not be grown under these conditions.

Coker 747—An early, white chaff variety with good winter-hardiness and resistance to lodging. This variety is a few inches shorter with slightly stiffer straw than Arthur. It is resistant to soil-borne mosaic, moderately resistant to leaf rust, stem rust, and powdery mildew.

Doublecrop—An early, winter-hardy, white chaff variety. It is similar to Arthur in characteristics and disease resistance, except that it matures a few days earlier and has a slightly higher leaf rust resistance.

McNair 4823—A short, stiff-strawed variety with good winter-hardiness. It matures a few days later than Arthur. It is resistant to leaf rust and most races of Hessian fly. McNair 4823 is susceptible to mildew. It has yielded well in the state variety trials for many years.

Oasis—This variety was released by Purdue University in 1973. It is similar to Arthur 71 in agronomic characteristics and resistance to rusts, powdery mildew, and Hessian fly. In addition to having resistance to these diseases, Oasis has resistance to leaf blotch. This variety has produced higher yields in the State Variety Trials than Arthur 71.

Stoddard—This variety originated from a cross of Stadler X Redcoat and released by the Missouri Agricultural Experiment Station. Stoddard is medium-tall with beardless heads. This variety matures similar to Arthur and has yielded well for 3 years in the state variety trials. It has moderate resistance to soil-borne mosaic. It is susceptible to mildew, stem rust, and Hessian Fly. This variety has good winter-hardiness.

ALFALFA

Gladiator—This variety was developed by Northrup, King & Co. and is wilt resistant and has some tolerance to alfalfa weevil and anthracnose. It has yielded well in the state variety trials for a number of years.

Saranac AR—This variety was developed at Cornell and is wilt- and anthracnose-resistant. The growth habit of this variety is the same as for Saranac. Seed supply may be limited in Tennessee.

Team—This variety has some resistance to the alfalfa weevil. This resistance is not enough to eliminate the need for weevil control measures by growers. Team also is reported to have resistance to anthracnose, stemphylium leaf spot, and common leaf spot. None of these diseases has been observed on this variety in Tennessee. This variety is available in the seed trade in Tennessee.

Weevlchek—This variety has some resistance to the alfalfa weevil, but this resistance is not great enough to eliminate the need for

weevil control measures by growers. Weevlchek does not grow as vigorous as most of the other varieties evaluated. Seed of this variety should be available in the seed trade in Tennessee.

Williamsburg—This variety was removed from the recommended list several years ago due to the lack of a seed source in Tennessee. Seed of this variety can once again be bought in Tennessee; therefore, it was placed back on the recommended list. Williamsburg has performed well all across the state in the variety trials.

RED CLOVER

Kenland—Kenland is a variety resistant to southern anthracnose and tolerant to powdery mildew. It is a synthetic variety made by combining several strains from Kentucky, Tennessee, Virginia, North Carolina, and Missouri.

Kenstar—Related synthetics have been evaluated in Tennessee for several years. These synthetics were Ky Syn A-1, and A-2. Kenstar was carried as an experimental Ky Syn A-3. A-1 consisted of 20 clones, A-2 of 30 clones, and Kenstar contained 10 of the superior clones common to both A-1 and A-2. Kenstar is similar to Kenland in resistance to anthracnose, powdery mildew, and general morphological appearance. In forage yields, these synthetics (Kenstar) have persisted for 3 years in many tests and Kenland for only 1 or 2.

Redland—Redland was evaluated as Illinois No. 2 for many years in the State Variety Trials. Redland has performed better than Kenland certified, but slightly less than Kenstar.

BURLEY TOBACCO

Burley 21—A very upright-leaf variety which has high resistance to wildfire and mosaic and low resistance to black root rot. Plants are more vigorous and grow off faster in plant beds than most other varieties.

Burley 37—An upright-leaf variety which has medium-high resistance to black shank, high resistance to wildfire, and low resistance to black root rot and medium resistance to fusarium wilt.

Burley 49—An upright-leaf variety which has medium-high resistance to black shank, high resistance to black root rot, wildfire, mosaic, and medium resistance to fusarium wilt. This variety is

recommended on farms where black shank and black root rot are causing problems.

Burley 64—A closely-spaced, upright-leaf, late-flowering variety which has medium-high resistance to black shank, high resistance to black root rot, wildfire, mosaic, and medium resistance to fusarium wilt. The variety is recommended on farms where black shank and black root rot are causing problems.

Ky. 14—A high-yielding variety which has medium-high resistance to black root rot, fusarium wilt, and high resistance to wildfire and mosaic. It has also shown some resistance to Tobacco Vein Virus (TVMV). Ky. 14 is similar to Va. 509 in number of days to termediate between those of Burley 21 and Burley 37.

MS Bu. 21 X Ky. 10—A semi-drooping leaf hybrid which has high resistance to wildfire and mosaic and low resistance to black root rot. It does not have any resistance to black shank. This hybrid yields about the same as Ky. 10, but more than Burley 21. It is better in quality than Ky. 10, but not as good as Burley 21.

Va. 509—An upright-leaf variety which has medium resistance to black shank, high resistance to wildfire, low resistance to black root rot, and medium resistance to fusarium wilt. It was selected from a cross of Burley 37 X Burley 21. The general characteristics are intermediate between those of Burley 21 and Burley 37.

DARK FIRE-CURED TOBACCO

Broad Leaf Madole—A relatively high-yielding, high-acre-value variety. Susceptible to mosaic and wildfire.

Black Mammoth—Leaf is somewhat darker and broader than Madole. Usually it does not droop quite as much as Madole. Susceptible to mosaic and wildfire.

DF-300—A variety moderately resistant to black shank, was developed and released in 1967 by the UT Agricultural Experiment Station. It is a broad-leaved, open-growing tobacco, lighter green in color than Madole with plant growth similar to Madole. The cured tobacco is usually lighter brown in color than Madole. It is best adapted to the production of wrapping tobacco, but is capable of producing cutting or snuff tobacco.

DF-911—A multiple disease resistant dark fire-cured variety, was developed and released in 1976 by University of Tennessee Agriculture Experiment Station. This variety is resistant to black root rot, mosaic, and wildfire but not to blackshank. It compares very favorably with Madole in growth, yield, and quality but DF-911 is slightly darker in color. Its growth habit and appearance is perhaps a little more open than Madole—especially at maturity—and the leaf attachment is more upright.

1977

PERFORMANCE

OF FIELD CROP VARIETIES

Corn-Grain Sorghum—Summer Annuals-Oats
Barley-Wheat-Alfalfa-Soybeans-Tobacco

DATA FOR 1977 WITH SUMMARIES OF RESULTS FROM PREVIOUS YEARS

INTRODUCTION

The purpose of the project, "Field Crop Variety Evaluation," is to test field crop varieties available to farmers of this and neighboring states, as well as the best experimental varieties being developed by experiment stations and other agencies.

The tests were conducted using field plot designs, fertility levels, and experimental techniques that have been found suitable for each crop.

Committees composed of specialists from the research, resident instruction, and extension staffs of the University of Tennessee Institute of Agriculture study the performance data and determine varieties to be recommended.

In order for a variety to be recommended, it must yield well and have other characteristics suitable for Tennessee conditions.

PRESENTATION OF DATA

The tests were conducted in each of the principal agricultural regions of the State where the specific crop is grown. Plots of each variety were replicated several times at each location. Locations of field tests are given in each table of data. An average of the performance of a variety across the area of adaption and over a period of years is the best basis for evaluation.

The tables on the following pages have been prepared with the entries listed in order of performance, the highest-yielding entry being listed first.

The least significant difference (L.S.D.) values at the 5% level for the 1977 tests are shown at the bottom of each table. The yields of any two varieties being compared must differ by at least this amount in order for the varieties to be considered different in yielding ability. Also, coefficient of variation values (C.V. %) are shown at the bottom of each table. This value is a measure of the variability found within each experiment. At each location where tests were conducted in 1977, the soil types are reported at the end of the table.

CORN

The 1977 Full-season State Corn Hybrid Tests were conducted at four locations and the medium-season tests were conducted at seven locations. Early-maturing tests were conducted at four locations. Forty new hybrids were evaluated at Knoxville. The tests at Ames Plantation and Jackson were harvested with a picker-sheller and the test at Crossville was harvested with a picker-snapper. All other tests were harvested by hand.

All tests were overplanted and thinned to 19,000 plants per acre. The plot size for hand-harvested plots was two rows 11 feet long and the plot size for the mechanically harvested plots was two rows 25 to 30 feet long.

Yields at Knoxville, Crossville, and Spring Hill were reduced due to dry weather. Lodging occurred at most locations and was severe at Crossville and Martin. This lodging was due to insect damage and stalk rot. The Crossville data were not included in the Medium-season average because it has been shown over the years that hybrids react differently at this location. The Jackson data were included in the Full-season average with the knowledge that corn hybrids also react differently at this location. The early maturing corn hybrid test at Ames Plantation was treated with Eradicane for

the control of Johnsongrass. Several hybrids were injured but the injury was not consistent from replication to replication.

The leading hybrids in the Medium-season tests were Pioneer brand 3147, T7100 (an experimental), McCurdy 72-44A, T7300 (an experimental), DeKalb XL390A, Pioneer brand 3184, Pioneer brand 3369A, and Princeton SX840. At Crossville the leading hybrids were Pioneer brand 3184, Funk G-4636, N.K. PX91, FFR 744C, and Princeton SX840.

Using a 2-year average the leading Medium-season hybrids in yield were Pioneer brand 3147, Pioneer 3184, DeKalb XL390A, Princeton SX840, Funk G-4520, FFR 744C, Pioneer brand 3369A, P.A.G. SX17A, and DeKalb XL80. DeKalb XL72B did not perform as well in 1977 as it had in previous years.

The leading Full-season hybrids in grain yield in 1977 were Pioneer brand 3147, Funk G-4848, Paymaster UC-9792, Pioneer brand 3145, DaKalb XL394. Pioneer brand 3147 lodged more in 1977 than it had in previous years. Funk G-4848, Pioneer brand 3145, and DeKalb XL394 stood well. Using a 2-year average the leading Full-season hybrids in grain yield were Pioneer brand 3147, Funk G-4848, FFR 929W, Zimmerman Z-11W, Pioneer brand 3145, DeKalb XL394, Princeton SX910, and Golden Harvest H-2660W. All of these hybrids have stood well in the variety tests for the past 2 years. The leading Full-season hybrids for a 3-year period are Pioneer brand 3147, DeKalb XL394, Golden Harvest H-2660W, Pioneer brand 3145, Princeton SX910, and Tenn. 608. Tenn. 608 has shown better standing ability than Tenn. 606.

Forty hybrids that were not included in the regular variety trials were evaluated at Knoxville in a preliminary test (Table 16).

Twenty early maturing hybrids were evaluated at Crossville, Knoxville, Martin, and Ames Plantation. At Knoxville the leading hybrids were McCurdy 84A, Zimmerman Z-24-Y, and Golden Harvest H-2600. At Crossville McCurdy 84A did not perform well. These early maturing hybrids seem to vary more in yield from year to year and location to location than later maturing hybrids. For example, Funk G-4525 at Ames Plantation was one of the leading grain producers whereas at Martin and Crossville it was one of the poorer producers. FFR 707C relative performance was better at Ames Plantation than at Knoxville and Martin. The test at Ames Plantation was treated with Eradicane for Johnsongrass control which resulted in injury to some hybrids. This injury was not consistent from one replication to another, thus a high C.V. (coefficient of variation) resulted.

Twenty-five corn hybrids were evaluated under virus conditions in Humphreys County in 1977. The virus was not as severe in 1976 and 1977 as it had been at this location in previous years. The leading hybrids in grain yield for 1977 were Pioneer brand 3147, FFR 707C, Pioneer brand 3179, Funk G-4848, DeKalb XL394, Beck's 87MDM, and FFR 292W. One hundred and forty-four hybrids were rated for virus tolerance and these data are in Table 20.

These data were furnished by L. M. Josephson and H. C. Kincer of the Tennessee Agricultural Experiment Station at Knoxville. A scale ranging from 1 through 9 was used to rate these varieties at three locations where the virus disease occurred in previous years.

Individual plants were evaluated on the basis of the following severity grades:

1=no apparent symptoms.

2=top 2 or 3 leaves mottled; no stunting.

3=entire plant above the ear mottled and/or discolored; no evident stunting.

4=chlorosis and/or discoloration above the ear; some stunting.

5=plant above the ear discolored; plants stunted and ear reduced in size.

6=upper ¾ of plant chlorotic and/or discolored; plants stunted and ear reduced in size.

7=entire plant discolored and stunted; small ear.

8=entire plant discolored and stunted; no ear produced.

9=plant completely collapsed; no ear.

A severity index for each entry was determined by multiplying the number of plants in each rating by the rating value, and the sum of these products was divided by the total number of plants. The percentage of diseased plants and the severity index for the diseased plants are shown in the tables in addition to the mean severity index for all plants. In interpreting the reaction to virus of any particular entry, the important data are the percentage of diseased plants and their severity index.

Table 1. Corn. Yield of 40 medium-season hybrids evaluated at six locations in 1977

Color	Cross	Hybrid	Avg.	Greene-ville 1	Knox-ville 2	Spring-field 3	Spring Hill 4	Martin 5	Milan 6
						Bushels per acre			
Y	2X	Pioneer brand 3147	138	156	110	166	102	141	154
W	3X	T7100	134	153	102	183	90	130	146
Y	2X	McCurdy 72-44A	133	145	103	156	105	146	144
W	3X	T7300	132	152	99	169	98	134	141
W	3X	DeKalb XL390A	132	140	89	178	91	140	155
Y	2X	Pioneer brand 3184	129	147	87	160	101	148	132
Y	2X	Pioneer brand 3369A	128	125	97	158	102	142	144
Y	2X	Princeton SX840	128	130	105	152	100	147	133
Y	M3X	Pioneer brand 3368A	126	138	99	150	92	138	139
Y	2X	N.K. PX 79	126	135	91	162	90	144	134
Y	3X	Asgrow Rx114	125	146	88	170	93	133	122
Y	2X	Funk G-4574	125	129	101	143	98	148	133
Y	2X	Golden Acres T. E. 6995	125	122	101	146	91	146	142
Y	2X	Trojan TXS115A	124	128	98	147	94	148	113
Y	M2X	T4021	123	132	100	151	94	136	127
Y	2X	P.A.G. SX17A	123	143	96	143	80	132	146
Y	2X	Funk G-4507	123	121	97	142	95	151	134
Y	2X	FFR 891C	123	129	106	141	99	139	122
Y	3X	Trojan TX119A	122	121	95	152	103	137	125
Y	2X	FFR 744C	122	131	97	140	88	147	131
Y	2X	DeKalb XL75	122	144	82	150	89	132	135
Y	2X	Wilstar 9990	122	128	96	158	94	132	124
Y	2X	Funk G-4636	122	133	107	144	98	132	126
Y	2X	DeKalb XL80	120	136	99	152	91	126	119
Y	M2X	Pioneer brand 3364	120	128	103	150	82	143	115
Y	2X	Golden Harvest H-2650	120	123	98	148	91	140	123
Y	2X	RA 1502	120	129	96	135	95	143	125
Y	2X	Funk G-4520	120	124	102	154	103	137	136
Y	2X	Trojan TXS114	120	127	92	147	78	148	127
Y	2X	Golden Harvest H-2666	120	135	95	136	94	132	126
Y	M2X	RA 2502	119	115	102	147	80	138	132
Y	2X	Asgrow RX101	118	125	96	155	88	125	119
Y	M2X	DeKalb XL75A	118	120	99	143	97	136	113
Y	2X	Golden Acres T. E. 6992	117	120	84	144	77	140	137
Y	M2X	Funk G-4776	117	118	82	151	95	134	121
Y	2X	P.A.G. SX98	116	114	99	141	83	131	127
Y	2X	P.A.G. 357	115	123	96	139	89	128	116
Y	2X	DeKalb XL72B	115	112	91	130	95	134	128
Y	2X	N.K. PX91	113	118	95	131	88	128	118
Y	2X	SeedKem SKX86	111	123	90	129	78	135	110
L.S.D. (.05)			9.1	17.6	12.6	9.6	N.S.	12.7	12.7
C.V. %			13.6	9.6	9.3	4.6	14.0	6.6	7.0

(Footnotes to Table 1, page 18)

[1] Huntington silt loam, local alluvium (2% to 5% slopes).

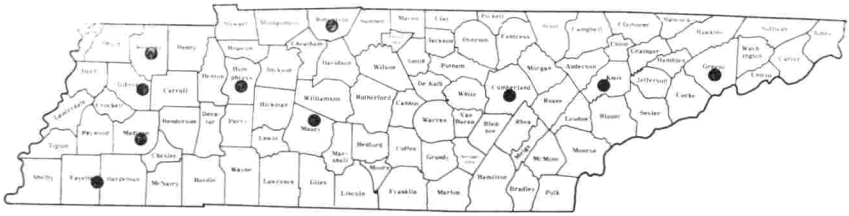
[2] Sequatchie loam (2% to 5% slopes).

[3] Huntington silt loam, local alluvium (2% to 5% slopes).

[4] Maury and Huntington silt loam, local alluvium (2% to 5% slopes).

[5] Collins silt loam (2% to 5% slopes).

[6] Collins silt loam (2% to 5% slopes).



Locations of field crop variety tests in Tennessee, 1977.

Table 2. Corn: Yield and other characeristics of 40 medium-season hybrids evaluated at six locations in 1977

Color	Cross	Hybrid	Yield	Erect plants	Grain quality	Husk cover	Ear height	Grain moisture at harvest
			Bu/A					
Y	2X	Pioneer brand 3147	138	84	4.5	4.0	54	19.0
W	3X	T 7100	134	78	3.4	2.5	56	19.9
Y	2X	McCurdy 72-44A	133	89	3.0	2.9	53	18.2
W	3X	T7300	132	86	3.4	3.1	58	19.8
W	3X	DeKalb XL390A	132	84	4.0	2.7	56	18.7
Y	2X	Pioneer brand 3184	129	94	4.2	4.8	49	19.1
Y	2X	Pioneer brand 3369A	128	88	3.0	5.0	47	17.6
Y	2X	Princeton SX840	128	88	4.1	3.7	52	18.3
Y	M3X	Pioneer brand 3368A	126	87	2.9	4.0	48	18.0
Y	2X	N. K. PX79	126	83	4.5	4.3	48	16.5
Y	3X	Asgrow RX114	125	86	2.8	2.9	52	18.2
Y	2X	Funk G-4574	125	81	3.9	3.8	48	16.7
Y	2X	Golden Acre T.E. 6995	125	89	3.7	3.6	46	17.0
Y	2X	Trojan TXS 115A	124	86	4.0	4.1	45	17.4
Y	M2X	T 4021	123	91	3.2	3.6	54	19.3
Y	2X	P.A.G. SX17A	123	77	4.3	3.7	46	17.6
Y	2X	Funk G-4507	123	88	3.9	4.0	49	17.2
Y	2X	FFR 891C	123	89	3.3	3.6	46	17.8
Y	3X	Trojan TX119A	122	90	3.9	4.2	48	17.5
Y	2X	FFR 744C	122	85	3.9	3.9	47	17.1
Y	2X	DeKalb XL75	122	82	4.6	4.1	48	17.5
Y	2X	Wilstar 9990	122	90	3.2	3.1	49	20.3
Y	2X	Funk G-4636	122	90	2.8	4.2	46	18.9
Y	2X	DeKalb XL80	120	87	2.8	2.9	46	18.6
Y	M2X	Pioneer brand 3364	120	92	3.3	3.3	47	17.8
Y	2X	Golden Harvest H-2650	120	85	3.8	4.6	46	18.3
Y	2X	RA 1502	120	92	3.5	3.4	47	18.4
Y	2X	Funk G-4520	120	95	3.5	3.9	46	17.6
Y	2X	Trojan TXS114	120	76	4.4	3.7	49	16.7
Y	2X	Golden Harvest H-2666	120	86	2.6	3.6	44	18.2
Y	M2X	RA 2502	119	85	3.5	3.2	43	19.0
Y	2X	Asgrow RX101	118	87	3.3	3.1	48	17.4
Y	M2X	DeKalb XL75A	118	90	3.8	2.9	55	19.1
Y	2X	Golden Acres T.E. 6992	117	84	3.7	3.4	49	16.8
Y	M2X	Funk G-4776	117	95	3.3	2.7	57	18.8
Y	2X	P.A.G. SX98	116	78	3.8	4.4	42	18.5
Y	2X	P.A.G. 357	115	64	4.0	4.6	44	17.7
Y	2X	DeKalb XL72B	115	85	3.9	4.9	42	17.4
Y	2X	N.K. PX91	113	88	3.4	3.4	48	17.9
Y	2X	Seed Kem SKX86	111	94	3.9	4.7	48	18.0
L.S.D. (.05)			9.1	—	—	—	—	—
C.V. %			13.0	—	—	—	—	—

[1] Rating was based on a scale of 1 through 9 with 1 being excellent and 9 poor.

Table 3. Corn: Yield of medium-season hybrids evaluated at five locations for 2 years (1976-1977)

Color	Cross	Hybrid	Avg.	Greene-ville	Knox-ville	Spring-field	Spring-Hill	Martin
					Bushels per acre			
Y	2X	Pioneer brand 3147	144	166	140	159	116	141
Y	2X	Pioneer brand 3184	140	156	120	148	117	162
W	3X	DeKalb XL390A	135	149	114	157	100	157
Y	2X	Princeton SX840	134	137	123	151	105	157
Y	2X	Funk G-4520	132	131	119	143	111	157
Y	2X	FFR744C	132	144	119	139	106	151
Y	2X	Pioneer brand 3369A	131	143	122	146	105	140
Y	2X	P.A.G. SX17A	131	155	117	140	102	141
Y	2X	DeKalb XL80	131	149	122	143	101	138
Y	2X	N.K. PX79	130	142	115	149	99	146
Y	M2X	DeKalb XL75A	130	137	124	146	108	133
Y	2X	Trojan TXS114	130	138	114	140	90	166
Y	2X	DeKalb XL75	129	144	109	139	102	151
Y	2X	RA 1502	129	135	118	136	103	154
Y	M2X	Funk G-4776	125	126	111	141	110	137
Y	2X	FFR 891C	125	129	112	134	105	145
Y	M3X	Pioneer brand 3368A	125	141	119	132	97	142
Y	M2X	RA2502	124	124	114	136	95	150
Y	2X	DeKalb XL72B	121	126	112	125	107	136
Y	2X	N.K. PX91	120	126	119	123	106	128

Table 4. Corn: Yield and other characteristics of medium season hybrids evaluated for 2 years (1976-77)

Color	Cross	Hybrid	Yield	Erect plants	Ear ht.	Quality	Husk cover	Grain moisture at harvest
			Bu/A	%	In	Rating [1]	Rating [1]	%
Y	2X	Pioneer brand 3147	144	90	57	4.2	3.6	20.8
Y	2X	Pioneer brand 3184	140	97	50	3.6	4.3	20.7
W	3X	DeKalb XL 390 A	135	90	58	3.9	2.8	20.6
Y	2X	Princeton SX 840	134	93	55	3.8	3.4	20.6
Y	2X	Funk G-4520	132	97	48	3.4	3.6	19.0
Y	2X	FFR 744C	132	92	50	3.7	3.6	18.5
Y	2X	Pioneer brand 3369A	131	94	49	2.8	4.6	19.3
Y	2X	P.A.G. SX17A	131	88	50	4.0	3.9	19.0
Y	2X	DeKalb XL80	131	93	49	2.6	2.9	20.6
Y	2X	N.K. PX79	130	91	51	4.3	4.0	18.0
Y	M2X	DeKalb XL75A	130	94	57	3.7	3.0	20.3
Y	2X	Trojan TXS114	130	87	52	3.9	3.4	18.4
Y	2X	DeKalb XL75	129	90	51	4.2	4.0	19.3
Y	2X	RA1502	129	95	50	3.0	3.0	20.2
Y	M2X	Funk G-4776	125	97	60	3.0	2.8	20.4
Y	2X	FFR 891C	125	93	47	3.2	3.6	19.1
Y	M3X	Pioneer brand 3368A	125	92	49	2.8	3.8	19.3
Y	M2X	RA2502	124	91	45	3.6	3.2	20.5
Y	2X	DeKalb XL72B	121	92	45	3.8	4.4	19.8
Y	2X	N.K. PX91	120	93	53	3.0	3.4	19.9

[1] Rating was based on a scale of 1 through 9 with 1 being excellent and 9 poor.

Table 5. Corn: Yield of medium-season hybrids evaluated at four locations for 3 years (1975-77)

Color	Cross	Hybrid	Avg.	Knoxville	Springfield	Spring Hill	Martin
			Bushels per acre				
Y	2X	Pioneer brand 3147	138	148	140	120	143
W	3X	DeKalb XL390A	128	119	134	107	150
Y	2X	Pioneer brand 3369A	126	128	125	108	142
Y	2X	P.A.G. SX17A	122	124	118	106	138
Y	2X	DeKalb XL80	121	123	126	102	133
Y	2X	DeKalb XL75	120	118	117	100	145
Y	2X	DeKalb XL72B	119	120	114	110	134
Y	M3X	Pioneer brand 3368A	118	119	112	98	142
Y	2X	N.K. PX91	116	122	112	103	125

Table 6. Corn: Yield and other characteristics of medium-season hybrids evaluated for 3 years (1975-77)

Color	Cross	Hybrid	Yield	Erect plants	Ear ht.	Quality	Husk cover	Grain moisture at harvest
			Bu/A	%	In.	Rating [1]	Rating [1]	%
Y	2X	Pioneer brand 3147	138	88	56	4.4	3.6	21.5
W	3X	DeKalb XL390A	128	86	58	3.9	2.6	21.3
Y	2X	Pioneer brand 3369A	126	90	48	2.8	4.1	19.8
Y	2X	P.A.G. SX17A	122	87	50	4.1	3.7	19.9
Y	2X	DeKalb XL80	121	87	49	2.7	2.7	21.3
Y	2X	DeKalb XL75	120	91	52	4.2	3.8	20.0
Y	2X	DeKalb XL72B	119	91	46	3.9	4.3	20.4
Y	M3X	Pioneer brand 3368A	118	89	49	2.7	3.5	20.0
Y	2X	N.K. PX91	116	92	54	3.0	3.5	20.4

1 Rating was based on a scale of 1 through 9 with 1 being excellent and 9 poor.

Table 7. Corn: Yield and other characteristics of 40 medium-season hybrids evaluated at Crossville in 1977 [1]

Color	Cross	Hybrid	Yield	Erect plants	Husk cover rating	Ear ht.	Grain moisture at harvest
			Bu/A		(1-9)	In.	%
Y	2X	Pioneer brand 3184	110	97	5.0	58	23.1
Y	2X	Funk G-4636	98	92	3.0	55	22.2
Y	2X	N.K. PX91	94	93	3.0	64	21.8
Y	2X	FFR 744C	93	74	3.0	56	19.6
Y	2X	Princeton SX840	93	97	3.0	62	22.4
Y	2X	Pioneer brand 3147	91	88	3.5	62	22.5
Y	2X	RA 1502	91	94	3.0	55	22.0
Y	2X	DeKalb XL75	90	88	3.5	54	20.9
Y	2X	FFR 891C	89	81	3.0	56	22.3
Y	2X	Golden Harvest H-2666	88	84	3.0	50	20.6
Y	2X	Golden Harvest H-2650	85	76	4.0	56	20.7
Y	3X	Trojan TX119A	84	84	3.5	55	20.4
Y	2X	Golden Acres T.E. 6995	82	82	3.0	56	19.5
Y	2X	Funk G-4507	82	75	3.0	53	20.0
Y	2X	DeKalb XL80	80	91	3.0	53	21.4
Y	2X	Wilstar 9990	80	80	3.0	60	23.3
Y	2X	Funk G-4520	80	93	3.0	53	20.6
Y	M2X	T4021	80	52	3.5	66	21.6
Y	2X	Seedkem SX86	79	91	3.5	56	20.4
Y	2X	N.K. PX79	79	62	3.0	52	20.6
Y	2X	Trojan TXS115A	78	80	3.0	52	19.8
Y	2X	DeKalb XL72B	76	99	4.0	48	21.0
Y	M2X	Funk G-4776	76	87	4.0	64	21.6
Y	2X	McCurdy 72-44A	76	79	3.0	62	22 3
Y	2X	Trojan TXS114	74	85	2.5	58	19.8
Y	2X	Funk G-4574	74	78	3.5	55	20.2
Y	M2X	RA2502	74	80	3.0	49	22.6
W	3X	DeKalb XL390A	73	74	3.0	63	21.6
Y	2X	Pioneer brand 3369A	73	78	4.5	57	20.7
Y	2X	Asgrow RX101	70	64	3.0	58	20.8
Y	M2X	Pioneer brand 3364	68	86	2.5	56	20.8
Y	2X	P.A.G. SX98	67	88	3.5	50	21.1
Y	M3X	Pioneer brand 3368A	67	83	2.5	59	21.4
Y	2X	P.A.G. 357	65	74	3.0	55	20.5
Y	M2X	DeKalb XL75A	65	80	4.0	59	22.0
W	3X	T 7300	65	75	3.5	68	21.3
Y	3X	Asgrow RX114	64	81	3.0	62	22 0
Y	2X	P.A.G. SX17A	62	68	4.5	56	20.0
Y	2X	Golden acres T.E. 6992	59	63	3.0	53	20.4
W	3X	T 7100	53	72	2 5	64	22 2
L.S.D. (.05)			24 6	—	—	—	—
C.V. %			24.1	—	—	—	—

[1] Hartsells loam (2% to 5% slopes).

Table 8. Corn: Yield and other characteristics of medium-season hybrid evaluated at Crossville for 2 years (1976-77)

Color	Cross	Hybrid	Yield	Erect plants	Husk cover	Ear ht.	Grain moisture at harvest
			Bu/A	%	Rating	In.	%
Y	2X	Pioneer brand 3184	129	98	4.0	58	23.4
Y	2X	Princeton SX840	116	96	3.5	59	23.2
Y	2X	N.K. PX 91	111	88	3.5	62	22.2
Y	2X	FFR 744C	110	84	3.0	58	20.3
Y	2X	RA1502	108	96	3.0	54	22.9
Y	2X	Pioneer brand 3147	109	81	3.8	62	23.8
Y	2X	DeKalb XL80	106	92	3.0	52	22.6
Y	2X	Funk G-4520	105	91	3.0	50	20.9
Y	2X	N.K. PX79	104	80	2.5	57	21.2
Y	M2X	DeKalb XL75A	101	86	3.5	58	22.2
Y	2X	DeKalb XL75	100	70	4.2	57	21.0
Y	2X	FFR891C	100	78	3.0	55	23.0
Y	2X	Trojan TXS114	99	73	2,2	55	20.2
W	3X	DeKalb XL390A	98	69	2.5	66	22.7
Y	2X	DeKalb XL72B	97	95	4.5	49	21.4
Y	2X	Pioneer brand 3369A	97	78	3.8	54	21.0
Y	M2X	Funk G-4776	95	76	3.5	61	24.2
Y	M2X	RA2502	93	75	2.5	50	23.2
Y	2X	P.A.G. SX 17A	91	78	3.8	58	20.5
Y	M3X	Pioneer brand 3368A	85	63	2.8	56	21.7

Table 9. Corn: Yield and other characteristics of medium-season hybrids evaluated at Crossville for 3 years (1975-77)

Color	Cross	Hybrid	Yield	Erect plants	Grain moisture at harvest
			Bu/A	%	%
Y	2X	N.K. PX 91	120	86	21.7
Y	2X	Pioneer brand 3147	116	78	23.4
Y	2X	DeKalb XL-80	114	86	22.3
Y	2X	DeKalb XL-75	114	76	22.1
W	3X	DeKalb XL-390A	112	73	22.5
Y	2X	P.A.G. SX 17A	110	82	20.4
Y	2X	Pioneer brand 3369A	110	81	21.1
Y	2X	DeKalb XL-72B	110	92	21.2
Y	M3X	Pioneer brand 3368A	101	69	21.5

Table 10. Corn: Yields of 36 full-season hybrids evaluated at four locations in 1977

Color	Cross	Hybrid	Avg. [1]	Knox-ville [2]	Spring Hill [3]	Ames Plantation [4]	Jackson [5]
				Bushels per acre			
Y	2X	Pioneer brand 3147	107	98	96	127	100
Y	2X	Funk G-4848	105	111	89	107	97
Y	2X	Paymaster UC-9792	105	99	94	118	105
Y	3X	Pioneer brand 3145	101	94	95	122	89
Y	3X	DeKalb XL-394	98	111	82	117	80
Y	3X	Coker 22	98	92	87	118	95
Y	3X	RA 3602	97	97	89	110	91
Y	3X	N.K. PX 723	97	95	87	103	98
W	2X	Zimmerman -11W	97	104	91	104	77
W	2X	Princeton SX-910	96	119	86	91	88
W	3X	FFR 929W	95	99	82	110	88
Y	4X	Pioneer brand 3179	95	89	92	126	74
Y	2X	Paymaster UC-12052	95	100	86	107	91
Y	M2X	RA 2601	94	89	91	102	88
Y	2X	Golden Harvest H-2775	94	99	75	103	96
Y	2X	DeKalb XL 80A	94	100	82	95	98
Y	2X	N.K. PX 95	93	90	83	121	88
Y	4X	Tenn. 608	92	88	83	91	99
Y	2X	Becks 87 MDM	92	89	85	108	82
Y	3X	FFR 914C	91	88	91	91	91
Y	2X	Wilstar 9997	89	89	84	83	95
W	4X	Tenn. 505	88	84	85	92	90
W	2X	McNair X233	88	101	74	106	73
W	M3X	Funk G-4747W	88	94	81	101	76
Y	2X	McNair X300	88	87	75	97	93
Y	2X	Golden Acres T.E. 6947	88	86	79	93	90
Y	2X	Coker 18	88	86	78	82	100
Y	3X	N.K. PX 737	87	85	78	99	85
W	4X	Pioneer brand 511A	86	95	95	84	73
Y	M2X	Paymaster UC-11982	86	94	67	101	78
W	M2X	RA 2602-W	85	89	77	95	76
W	2X	Golden Harvest H-2660W	85	84	76	113	71
Y	4X	Coker 56	80	87	69	92	74
W	3X	Asgrow RX403W	79	92	79	73	68
Y	2X	Seedkem SKX98MF	77	86	66	81	81
Y	4X	Tenn. 606	70	72	68	85	55
L.S.D. (.05)			13.2	15.7	16.0	21.8	18.3
C.V. %			20.6	5.4	13.8	15.3	18.7

[1] Jackson yields are average of six replications. When yields were analyzed across locations only four replicates were used because all other location had only four replications.

[2] Sequatchie silt loam (2% to 5% slopes).

[3] Maury silt loam (2% to 5% slope).

[4] Memphis silt loam (2% to 5% slope).

[5] Loring and Dexter silt loam (0% to 2% slopes).

Table 11. Corn: Yield and other characteristics of 36 full-season hybrids evaluated at four locations in 1977

Color	Cross	Hybrid	Yield	Erect plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
			Bu/A	%	Rating	Rating	In.	%
Y	2X	Pioneer brand 3147	107	81	4.0	2.3	52	17.1
Y	2X	Funk G-4848	105	98	3.2	2.3	51	19.4
Y	2X	Paymaster UC-9792	105	84	2.5	3.1	50	17.4
Y	3X	Pioneer brand 3145	101	95	3.0	2.0	52	17.8
Y	3X	DeKalb XL-394	98	93	2.8	3.3	53	18.2
Y	3X	Coker 22	98	86	3.8	2.0	50	17.1
Y	3X	RA 3602	97	88	3.2	3.2	53	17.3
Y	3X	N.K. PX 723	97	91	3.5	3.0	56	17.3
W	2X	Zimmerman Z-11W	97	87	3.8	2.7	53	18.0
W	2X	Princeton SX-910	96	90	3.2	2.7	56	18.2
W	3X	FFR 929W	95	91	3.5	2.5	55	17.9
Y	4X	Pioneer brand 3179	95	83	3.5	3.0	51	16.6
Y	2X	Paymaster UC-12052	95	97	3.5	1.7	54	18.7
Y	M2X	RA 2601	94	91	3.0	2.8	48	19.8
Y	2X	Golden Harvest H-2775	94	92	3.0	2.8	47	17.9
Y	2X	DeKalb XL-80A	94	86	3.8	4.2	46	17.8
Y	2X	N.K. PX 95	93	95	4.8	2.7	56	17.7
Y	4X	Tenn. 608	92	79	2.8	2.5	55	17.4
Y	2X	Becks 87 MDM	92	88	3.0	2.7	54	16.5
Y	3X	FFR 914C	91	90	3.5	3.8	44	17.7
Y	2X	Wistar 9997	89	89	2.8	2.5	50	19.5
W	4X	Tenn. 505	88	76	3.8	3.3	54	16.6
W	2X	McNair X233	88	86	3.5	2.0	57	18.2
W	M3X	Funk G-4747W	88	81	3.8	2.2	58	17.8
Y	2X	McNair X300	88	90	3.0	3.7	44	17.9
Y	2X	Golden acres T.E. 6947	88	86	3.0	3.0	51	17.4
Y	2X	Coker 18	88	78	3.2	2.0	45	17.4
Y	3X	N.K. PX 737	87	87	2.8	2.8	56	17.5
W	4X	Pioneer brand 511A	86	63	3.8	2.0	50	17.5
Y	M2X	Paymaster UC-11982	86	96	4.0	2.8	51	20.3
W	M2X	RA 2602-W	85	85	3.8	2.3	53	17.7
W	2X	Golden Harvest H-2660W	85	88	3.2	3.0	54	18.2
Y	4X	Coker 56	80	87	3.2	2.7	54	18.6
W	3X	Asgrow RX 403W	79	86	3.2	2.0	56	19.3
Y	2X	Seedkem SKX98MF	77	78	3.5	5.3	38	17.1
Y	4X	Tenn. 606	70	66	4.0	2.5	56	17.3
L.S.D. (.05)			13.2	—	—	—	—	—
C.V. %			20.6	—	—	—	—	—

Table 12. Corn: Yields of full-season hybrids evaluated at four locations for a 2-year period (1976-77)

Color	Cross	Hybrid	Avg.	Knox-ville	Spring Hill	Ames Plantation	Jackson
				Bushels per acre			
Y	2X	Pioneer brand 3147	119	131	116	123	105
Y	2X	Funk G-4848	115	139	113	107	100
W	3X	FFR929W	107	126	103	110	91
W	2X	Zimmerman Z-11W	107	128	106	111	82
Y	3X	Pioneer brand 3145	107	119	107	107	93
Y	3X	DeKalb XL 394	105	130	98	109	84
W	2X	Princeton SX 910	104	140	95	91	88
W	2X	Golden Harvest H-2660W	104	122	98	110	84
Y	2X	McNair X300	101	117	90	104	94
Y	2X	DeKalb XL 80A	100	126	92	90	94
W	M2X	RA 2602-W	100	122	94	106	79
Y	4X	Tenn. 608	100	112	100	95	91
W	4X	Pioneer brand 511A	98	118	103	92	78
W	4X	Tenn. 505	95	110	93	94	83
Y	4X	Coker 56	93	106	89	98	78
W	3X	Asgrow RX 403W	92	113	94	81	78
Y	4X	Tenn. 606	84	100	86	82	67
Y	2X	Golden Harvest H-2775 [1]	97	122	73	88	105

[1] 1975-77 data.

Table 13. Corn: Yield and other characteristics of full-season hybrids evaluated at four locations for a 2-year period

Color	Cross	Hybrid	Avg.	Erect plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
			Bu/A	%	Rating	Rating	In.	%
Y	2X	Pioneer brand 3147	119	89	4.0	2.9	54	18.4
Y	2X	Funk G-4848	115	98	2.8	2.6	53	21.4
W	3X	FFR929W	107	94	3.2	2.8	57	19.6
W	2X	Zimmerman Z-11W	107	92	3.4	2.8	57	19.6
Y	3X	Pioneer brand 3145	107	97	3.0	2.4	54	19.6
Y	3X	DeKalb XL-394	105	96	2.9	3.2	58	19.9
W	2X	Princeton SX 910	104	94	3.1	2.5	56	19.8
W	2X	Golden Harvest H-2660W	104	93	3.1	3.1	57	19.6
Y	2X	McNair 300	101	93	3.2	3.5	47	19.8
Y	2X	DeKalb XL-80A	100	92	3.6	4.1	48	20.0
W	M2X	RA 2602-W	100	91	3.2	2.6	55	19.4
Y	4X	Tenn. 608	100	88	2.9	2.8	60	19.4
W	4X	Pioneer brand 511A	98	79	3.6	2.2	53	19.2
W	4X	Tenn. 505	95	82	3.4	3.0	56	19.2
Y	4X	Coker 56	93	91	2.8	3.2	55	20.6
W	3X	Asgrow RX403W	92	90	3.4	2.2	59	21.2
Y	4X	Tenn. 606	84	77	3.5	2.9	59	18.9
Y	2X	Golden Harvest H-2775 [1]	97	79	2.9	3.2	50	19.8

[1] 1975 and 77 data.

Table 14. Corn: Yields of full-season hybrids evaluated at four locations for a 3-year period (1975-77)

Color	Cross	Hybrid	Avg.	Knox-ville	Spring Hill	Ames Plantation	Jackson
				Bushels per acre			
Y	2X	Pioneer brand 3147	123	142	116	123	113
Y	3X	DeKalb XL-394	112	137	99	111	100
W	2X	Golden Harvest H-2660W	108	131	100	106	95
Y	3X	Pioneer brand 3145	107	127	99	105	98
W	2X	Princeton SX-910	107	147	98	86	96
Y	4X	Tenn. 608	106	128	101	98	98
Y	2X	McNair X 300	101	124	88	92	94
W	4X	Tenn. 505	100	119	92	94	94
W	4X	Pioneer brand 511A	98	129	97	88	79
Y	4X	Coker 56	98	118	88	94	90
Y	4X	Tenn. 606	93	119	90	82	80

Table 15. Corn: Yield and other characteristics of full-season hybrids evaluated at four locations for a 3-year period (1975-77)

Color	Cross	Hybrid	Avg.	Erect plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
			Bu/A	%	Rating	Rating	In.	%
Y	2X	Pioneer brand 3147	123	89	4.5	3.5	56	19.3
Y	3X	DeKalb XL-394	112	95	2.9	3.1	61	20.7
W	2X	Golden Harvest H-2660W	108	87	3.0	2.8	59	20.2
Y	3X	Pioneer brand 3145	107	97	2.8	2.6	56	20.3
W	2X	Princeton SX-910	107	90	3.1	2.4	58	20.4
Y	4X	Tenn. 608	106	86	2.9	3.0	61	20.2
Y	2X	McNair X 300	101	85	3.2	3.6	49	20.6
W	4X	Tenn. 505	100	83	3.6	3.0	58	20.3
W	4X	Pioneer brand 511A	98	77	3.4	2.2	55	20.1
Y	4X	Coker 56	98	91	2.8	3.3	55	21.5
Y	4X	Tenn. 606	93	75	3.3	3.4	60	19.8

Table 16. Corn: Yield and other characteristtic of 40 hybrids in a preli. test at Knoville in 1977 [1]

Color	Cross	Hybrid	Yield	Erect plants	Quality	Husk cover	Ear ht.	Grain moisture at harvest
			Bu/A	%	Rating (1-9)	Rating (1-9)	In.	%
Y	2X	McCurdy 76-92	126	94	4.3	3.0	51	22.2
Y	3X	McCurdy 75-210	125	96	2.0	3.5	60	23.2
Y	3X	McNair S-338	124	86	3.0	3.0	54	21.9
Y	2X	McCurdy 75-200	123	89	2.7	3.5	60	25.0
W	3X	N.K. PX 718W	120	95	2.7	3.0	62	21.9
Y	2X	Seedkem SKX68M	117	94	3.0	3.5	48	17.8
Y	2X	Paymaster UC8951	117	84	3.7	3.5	48	21.4
Y	2X	Premier 688	115	92	3.0	3.5	46	21.6
Y	2X	Funk 6-27970	114	96	3.0	4.0	45	23.6
Y	3X	RA3502	113	83	3.0	4.0	44	19.3
Y	2X	McCurdy 76	113	89	2.7	3.0	54	22.2
Y	3X	FFR Exp. 2487	113	95	4.0	5.0	45	21.0
Y	2X	Pioneer brand 3369A	112	93	3.0	5.0	48	19.0
Y	M2X	Trojan TXS113	112	95	2.7	5.0	45	20.1
Y	2X	Becks 88X	111	88	2.3	3.5	45	21.2
Y	2X	Zimmerman Z-20-Y	111	90	5.0	5.5	50	20.8
Y	2X	Wilstar 7782	111	93	2.7	4.0	48	20.0
Y	3X	Wilstar 7676	110	82	3.3	5.0	45	20.8
Y	3X	FFR Exp. 2306	109	84	4.7	4.0	44	19.8
Y	2X	Becks 8812	106	96	2.7	3.0	34	20.6
Y	2X	Becks 6527	105	70	4.0	4.5	44	21.0
Y	2X	Funk G-27794	105	92	3.3	2.0	62	25.0
Y	2X	Dennis 37	105	77	3.7	3.0	44	19.8
Y	2X	O'S Gold SX3344	104	66	3.7	3.0	44	19.0
Y	2X	O'S Gold SX5500A	103	87	5.0	4.0	46	19.5
Y	M2X	Super Crost 6800	103	93	4.0	2.5	40	22.0
Y	SP3X	Funk G-28189	102	88	3.0	2.5	59	23.8
Y	2X	Asgrow RX90	101	83	4.7	4.0	46	19.9
Y	4X	FFR Exp. 2344	101	75	4.7	4.5	40	19.1
Y	3X	P.A.G. 644W	100	93	3.3	4.0	45	21.6
Y	2X	Dennis 48	100	95	3.7	5.5	39	19.0
Y	2X	Golden Acre T.E.6968	99	86	3.0	4.5	42	19.5
Y	2X	Super Crost 5440	99	98	4.3	3.5	44	19.4
Y	3X	FFR Exp. 2118	98	80	5.0	3.5	44	20.3
Y	2X	Dennis 31	98	77	3.7	3.5	44	18.8
W	M2X	Funk G-28236	97	90	3.0	3.0	58	23.0
Y	2X	Trojan T1120	97	90	3.3	4.0	46	20.2
Y	M2X	Super Crost 5440A	97	92	3.7	4.5	52	20.2
Y	2X	Funk G-4321A	96	88	3.7	4.5	35	16.7
Y	2X	Funk G-4628	89	96	3.0	5.0	42	22.2
L.S.D. (.05)			15.2	—	—	—	—	—
C.V. %			10.1	—	—	—	—	—

[1] Sequatchie loam (2% to 5% slopes).

Table 17. Corn: Yield of 20 early maturing hybrids evaluated at four locations in 1977

Color	Cross	Hybrid	Avg.	Knox-ville [1]	Cross-ville [2]	Martin [3]	Ames Planta-tion
			Bu/A				
Y	2X	Zimmerman Z24Y	120	129	107	148	95
Y	2X	Wilstar 6663	118	116	122	146	88
Y	2X	Golden Harvest H-2600	114	125	117	138	76
Y	2X	McCurdy 84A	112	132	98	138	79
Y	2X	DeKalb XL72AA	111	114	113	140	78
Y	2X	McCurdy MSX 70	111	115	103	137	90
Y	2X	Funk G-4507	109	103	110	120	105
Y	2X	RA1501	109	111	100	140	83
Y	2X	P.A.G. 314	105	99	108	138	75
Y	2X	Funk G-4449	105	98	105	124	91
Y	2X	Seedkem SKX76	104	112	105	135	66
Y	2X	FFR707C	103	95	104	126	86
Y	2X	Pioneer brand 3325A	102	115	105	120	70
Y	2X	Funk G-4525	102	108	95	114	90
Y	2X	McNair X-170	101	114	107	125	58
Y	3X	FFR 799C	100	108	107	118	67
Y	2X	Golden Harvest H-2500	98	109	95	122	64
Y	2X	DeKalb XL64B	96	106	98	108	72
Y	M2X	DeKalb XL65B	93	101	94	116	60
Y	2X	Pioneer brand 3780	85	96	98	92	56
L.S.D. (105)				15.4	N.S.	12.1	20.4
C.V. %				9.9	12.5	6.7	18.7

[1] Sequatchie loam (2% to 5% slopes).
[2] Hartselle loam (2% to 5% slopes).
[3] Collins silt loam (2% to 5% slopes).
[4] Memphis silt loam (2% to 5% slopes).

Table 18. Corn: Yield and other characteristics of early maturing hybrids evaluated at four locations in 1977

Color	Corn	Hybrid	Avg.	Erect plants	Quality	Husk cover	Ear ht.	Grain moisture at harvest
			Bu/A	%	Rating (1-9)	Rating (1-9)	In.	%
Y	2X	Zimmerman Z-24-Y	120	95	3.2	4.0	50	19.5
Y	2X	Wilstar 6663	118	93	4.3	3.7	50	18.5
Y	2X	Golden Harvest H-2600	114	97	3.5	3.9	48	18.3
Y	2X	McCurdy 84A	112	94	4.7	3.8	51	20.5
Y	2X	DeKalb XL72AA	111	95	4.2	4.0	48	19.0
Y	2X	McCurdy MSX70	111	93	4.8	3.3	51	19.2
Y	2X	Funk G-4507	109	92	4.8	4.3	48	19.0
Y	2X	RA 1501	109	96	3.8	3.6	48	19.3
Y	2X	P.A.G. 314	105	86	4.5	3.7	49	18.6
Y	2X	Funk G-4449	105	92	4.3	4.0	43	18.6
Y	2X	Seedkem SKX76	104	95	4.2	3.2	45	19.2
Y	2X	FFR 707C	103	92	5.0	4.5	50	18.6
Y	2X	Pioneer brand 3325A	102	96	4.2	3.5	44	20.0
Y	2X	Funk G-4525	102	95	4.5	3.0	47	18.6
Y	2X	McNair X-170	101	96	4.0	4.0	45	19.4
	3X	FFR 799C	100	93	5.2	4.2	44	19.5
Y	2X	Golden Harvest H-2500	98	94	4.3	3.5	50	19.1
Y	2X	DeKalb XL64B	96	95	4.2	3.5	46	19.3
Y	M2X	DeKalb XL65B	93	93	5.0	4.5	48	19.4
Y	2X	Pioneer brand 3780	85	86	5.0	5.3	39	17.2

Table 19. Corn: Yield and other characteristics of 25 selected hybrids grown on Owens Bros. Farm, Humphreys County under virus conditions in 1977 [1]

Rank in yield	Hybrid	Acre yield	Virus reaction: Diseased plants %	Virus reaction: Diseased plants Sev. index	Virus reaction: Mean sev. index	Moisture at harvest	Erect plants	Lodging: Root	Lodging: Stalk	Ears per 100 plants: Total	Ears per 100 plants: Nubs
		bu.		grade	grade	%	%	%	%	no.	no.
1	Pioneer brand 3147	131.1	12.5	3.5	1.4	29.8	93.0	0	7.0	95	18
2	FFR 707C	127.6	2.9	2.0	1. 1	24.6	96.2	0	3.8	99	8
3	Pioneer brand 3179	123.2	40.4	3.0	1.8	26.1	89.2	2.7	8.1	96	18
4	Funk G-4848	117.6	8.2	2.6	1.2	29.7	93.7	0.9	5.4	94	25
5	DeKalb XL394	115.6	3.4	2.2	1.1	30.6	94.1	3.4	2.5	110	39
6	Beck's 87MDM	114.7	21.3	2.9	1.4	25.2	90.7	0.8	8.5	107	26
7	FFR 929W	113.3	18.9	4.3	1.7	24.8	86.3	2.6	11.1	91	22
8	Tenn. 505	111.8	7.2	2.7	1.2	29.1	87.2	2.4	10.4	115	48
9	RA 2601	111.8	42.8	4.0	2.3	27.4	77.8	0	22.2	91	26
10	Funk G-4747W	110.7	16.6	3.2	1.3	26.0	90.1	0	9.9	86	20
11	Princeton SX910	109.7	20.8	3.4	1.6	25.8	90.6	0	9.4	91	21
12	P.A.G. SX-17A	108.3	14.2	3.6	1.4	27.6	85.0	5.0	10.0	96	17
13	Funk G-4525	106.8	3.9	3.0	1.1	20.2	87.0	0	13.0	99	15
14	Pioneer brand 3145	105.7	11.9	3.5	1.3	28.3	97.5	0	2.5	92	25
15	DeKalb XL72B	104.8	4.7	2.0	1.1	24.8	93.3	1.0	5.7	105	28
16	Pioneer brand 3364	103.7	20.7	3.4	1.6	23.8	87.3	0.8	11.9	94	22
17	RA 2602 W	103.4	34.1	4.1	2.2	24.4	77.1	0.9	22.0	86	28
18	RA 3602	99.5	29.1	3.8	2.2	26.2	85.8	0	14.2	98	32
19	Tenn. 608	99.2	10.6	2.7	1.2	28.5	64.9	3.5	31.6	105	31
20	Pioneer brand 3369A	98.7	53.3	3.9	2.8	24.3	73.9	3.5	22.6	94	27
21	Golden Harvest H-2660W	98.1	32.4	3.4	1.8	27.6	84.6	0	15.4	91	23
22	Premier SX633A	87.9	61.8	4.1	3.0	24.8	85.6	0	14.4	85	23
23	N.K. PX-79	87.5	48.2	4.2	2.8	23.8	73.1	0	26.9	85	17
24	Wilstar 7676	84.0	50.0	4.0	2.6	24.8	73.4	0.9	25.7	88	24
25	Tenn. 606	82.7	39.0	3.4	2.0	28.6	66.0	3.9	30.1	100	38
	Mean	106.3	24.3	3.3	1.7	26.3	83.6	2.6	13.8	96	25
	L.S.D. (.05)	21.5	19.0	1.3	0.8						
	C.V. %	14.4	55.7	27.4	32.2						

[1] Data are means of four replications, except moisture from two replications.

Table 20. Mean virus reaction of corn hybrids grown in Humphreys County, Tennessee in 1977 [1 2 3]

Hybrid	Diseased Plants		Mean Sev. index
	%	Sev. index	
Full-Season Hybrids			
Pioneer brand 511A	31.3	4.6	2.1
Pioneer brand 3145	23.7	3.1	1.5
Pioneer brand 3147	34.3	3.5	1.9
Pioneer brand 3179	54.3	3.3	2.2
DeKalb XL80A	94.6	4.7	4.5
DeKalb XL 394	36.1	3.5	1.9
Funk G-4747W	19.4	3.6	1.5
Funk G-4848	45.0	4.0	2.4
McNair X-233	25.0	3.3	1.6
McNair X-300	80.0	4.4	3.7
Coker 18	74.3	4.1	3.3
Coker 22	88.9	4.4	4.1
Coker 56	69.4	4.0	3.1
Golden Harvest H-2660W	40.0	3.5	2.0
Golden Harvest H-2775	83.4	4.2	3.7
Golden Acres T.E. 6947	29.0	3.7	1.8
Princeton SX910	38.7	3.9	2.1
Asgrow RX403W	48.5	3.9	2.4
RA 2601	75.0	4.2	3.4
RA 2602-W	31.0	4.0	1.9
RA 3602	37.5	3.9	2.1
FFR 914C	55.6	4.3	2.9
FFR 929W	50.0	3.9	2.4
Zimmerman Z-11W	35.1	3.4	1.8
Wilstar 9997	88.9	4.5	4.1
N.K. PX95	56.1	4.8	3.1
N.K. PX23	23.1	3.2	1.5
N.K. PX737	32.1	3.7	1.9
Paymaster UC9792	57.9	3.7	2.6
Paymaster UC12052	90.0	5.0	4.6
Paymaster 11982	73.3	4.7	3.7
SeedKem 98MF	84.9	4.8	4.2
Becks 87MDM	23.7	3.6	1.6
Tenn. 505	14.3	3.4	1.3
Tenn. 606	23.3	4.4	1.7
Tenn. 608	14.7	3.4	1.4
Medium-Season Hybrids			
Pioneer brand 3147	19.4	3.4	1.5
Pioneer brand 3184	40.0	4.9	2.5
Pioneer brand 3364	55.3	3.3	2.3
Pioneer brand 3368A	88.2	4.6	4.2
Pioneer brand 3369A	79.3	4.7	3.9

Table 20 continued

Hybrid	Diseased Plants		Mean Sev. index
	%	Sev. index	
DeKalb XL72B	11.5	3.7	1.3
DeKalb XL75	62.5	4.4	3.1
DeKalb XL75A	90.0	5.4	5.0
DeKalb XL80	88.2	4.5	4.1
DeKalb XL390A	59.5	4.0	2.8
Funk G-4507	90.0	5.5	5.1
Funk G-4520	100.0	5.0	5.0
Funk G-4574	91.3	4.9	4.5
Funk G-4636	100.0	7.0	7.0
Funk G-4776	22.7	4.0	1.7
P.A.G. SX17A	50.0	3.8	2.4
P.A.G. SX98	80.0	4.4	3.7
P.A.G 357	80.0	4.2	3.5
McCurdy 72-44A	84.9	4.5	4.0
Princeton SX840	84.9	5.1	4.5
RA 1502	88.0	5.0	4.5
RA 2502	72.0	4.4	3.4
N.K. PX79	55.9	3.7	2.5
N.K. PX91	72.2	4.1	3.2
Trojan TXS114	96.0	5.3	5.1
Trojan TXS115A	96.9	4.8	4.7
Trojan TX119A	58.3	4.2	2.9
FFR 744C	84.0	4.6	4.0
FFR 891C	71.9	4.5	3.5
Golden Harvest H-2650	67.7	4.3	3.3
Golden Harvest H-2666	84.6	4.7	4.1
Golden Acres T.E. 6992	100.0	4.8	4.8
Golden Acres T.E. 6995	90.0	5.1	4.7
Asgrow RX101	65.5	4.6	3.4
Asgrow RX114	90.6	4.3	4.0
Wilstar 9990	80.7	4.9	4.2
SeedKem SK X86	84.4	4.3	3.8
T 4021	36.1	3.6	1.9
T 7100	51.7	3.4	2.2
T 7300	56.3	4.3	2.8
Early Maturing Hybrids			
Pioneer brand 3325A	85.7	4.0	3.5
Pioneer brand 3780	84.0	5.2	4.5
DeKalb XL64B	71.0	4.9	3.7
DeKalb XL65B	89.3	5.4	5.0
DeKalb XL72AA	96.0	4.7	4.5
Funk G-4449	83.3	4.9	4.2
Funk G-4507	90.0	5.6	5.1
Funk G-4525	35.1	3.5	1.9
P.A.G. 314	90.3	4.9	4.5
McCurdy MSX70	62.2	4.8	3.4

Table 20 continued

Hybrid	Diseased Plants %	Diseased Plants Sev. index	Mean Sev. index
McCurdy 84A	93.9	4.9	4.7
RA 1501	89.3	5.7	5.2
FFR707C	28.6	3.0	1.6
FFR 799C	93.9	4.6	4.4
Golden Harvest H-2500	100.0	6.1	6.1
Golden Harvest H-2600	86.2	5.0	4.4
McNair X-170	91.9	4.7	4.4
Zimmerman Z-24Y	90.6	4.9	4.5
Wilstar 6663	86.2	5.2	4.6
SeedKem SK X76	80.0	4.9	4.1
Preliminary Hybrids [4]			
Pioneer brand 3369A	90.9	5.4	5.0
Funk G-4321A	76.3	4.5	3.7
Funk G-4628	62.5	4.1	3.0
Funk G-27794	20.0	3.2	1.4
Funk G-27970	22.7	3.2	1.5
Funk G-28189	10.5	3.5	1.3
Funk G-28236	9.1	3.7	1.2
P.A.G. 644W	28.6	4.4	2.0
McCurdy 75-20	81.3	5.4	4.6
McMurdy 75-210	84.4	4.4	3.9
McCurdy 76	91.4	4.6	4.3
McCurdy 76-92	83.9	5.7	4.9
RA 3502	90.3	5.0	4.6
FFR Exp. 2118	96.3	5.3	5.1
FFR Exp. 2306	93.3	4.8	4.5
FFR Exp. 2344	83.9	5.4	4.7
FFR Exp. 2487	75.0	5.3	4.2
Zimmerman Z-20Y	87.9	5.3	4.8
Wilstar 7676	82.9	5.2	4.5
Wilstar 7782	90.6	6.2	5.7
SeedKem SK X68M	21.9	3.0	1.4
McNair S-338	79.0	4.6	3.9
N.K. PX718W	35.9	3.8	2.0
Trojan T1120	96.2	5.1	5.0
Trojan TXS113	100.0	4.6	4.6
Super Crost 5440	90.3	5.4	5.0
Super Crost 5440A	94.6	5.0	4.8
Super Crost 6800	82.8	4.4	3.8
Paymaster UC8951	90.3	6.2	5.7
Asgrow RX90	78.8	4.4	3.7
Golden Acres T.E. 6968	74.3	4.9	3.9
O's Gold SX3344	58 6	3.9	2.7
O's Gold SX5500A	79.3	4.5	3.7
Becks 88X	87.1	5.4	4.8
Becks 6527	92.9	4.5	4.2

Table 20 continued

Hybrid	Diseased Plants		Mean Sev. index
	%	Sev. index	
Becks 8812	82.9	4.9	4.2
Dennis 31	55.9	4.2	2.8
Dennis 37	93.6	5.6	5.3
Dennis 48	96.6	5.6	5.4
Pioneer brand 688	90.9	4.8	4.5
Overflow test [5]			
Premier SX64	96.3	4.6	4.4
Premier SX633	100.0	5.7	5.7
Premier SX633A	87.0	4.7	4.2
Premier SX655	81.3	4.1	3.5
Security Seed 111	64.5	4.5	3.2
Security Seed 112	100.0	5.2	5.2
Security Seed 120A	87.5	4.6	4.2
Security Seed 125	93.6	4.3	4.1

[1] Data are means of two replications.

[2] Data furnished by L. M. Josephson and H. C. Kincer.

[3] Rating based on a scale of 1 through 9 (1 being no apparent symtoms and 9 being completely collapsed with no ear.

[4] Preliminary hybrids are new or experimental hybrids evaluated at Knoxville only.

[5] Overflow test consisted of hybrids that were received late.

WHEAT

The wheat varieties were evaluated at seven locations in 1977. No yields are reported for Crossville because of winter killing. All small-grain tests at this location were lost due to severe cold weather. The yields of wheat at the other locations were good with little or no winter killing.

In 1977 a few varieties produced high yields at Greeneville, Spring Hill, and Jackson. The leading varieties in grain yield were McNair 3001 (an experimental), Coker 747, McNair 1813, and McNair 4823. McNair 1813 performed better in 1977 than it had in previous years. McNair 4823 produced high yields at Greeneville and Spring Hill. This variety did not perform well at Knoxville, Springfield, Jackson, and Milan.

Doublecrop was the earliest maturing variety evaluated and McNair 4823 was the latest. Beau, Doublecrop, and McNair 4823 showed the best lodging resistance with the new wheat, Sullivan, lodging the most.

Using a 2-year average the five leading varieties in grain yield were Coker 747, McNair 4823, McNair 1813, Beau, and Arthur. The recommended wheat varieties for 1977-78 are Arthur, Abe, Coker 747, Doublecrop, Oasis, McNair 4823, and Stoddard. Present plans indicate that Oasis will not be recommended after this year. The two new varieties added to the recommended list were Coker 747 and Doublecrop. Coker 747 is a high yielding, early maturing variety with resistance to soil-borne mosaic, and moderate resistance to leaf rust, stem rust, and powdery mildew. It is not Hessian fly resistant. Doublecrop is similar to Arthur in characteristics and disease resistance, except that it matures a few days earlier.

The hard red winter wheat varieties were evaluated in 1977 at Springfield. DeKalb 589 and Triumph Imp. were the best grain producers. Triumph Imp. has been the best grain producer in these tests for several years.

Table 21. Wheat: Grain yield of soft red winter wheat varieties evaluated at five locations in 1977 [1]

Variety	Avg.	Knoxville[2]	Greeneville[3]	Springfield[4]	Spring Hill[5]	Jackson[6]
			Bushels per acre			
McNair 3001 [7]	63	48	73	52	75	70
Coker 747	58	44	68	47	76	52
McNair 1813	55	37	68	43	63	61
McNair 4823	50	25	82	33	67	43
Doublecrop	49	34	65	41	60	46
Beau	49	29	56	37	69	53
Sullivan	48	38	44	43	68	47
Arthur	47	33	41	39	71	51
Abe	46	20	56	36	73	47
Stoddard	45	38	40	45	59	45
Oasis	44	30	46	37	64	43
L.S.D. (.05)	—	4.6	10.3	5.0	6.0	6.1
C.V. %	—	9.3	12.3	8.3	6.3	8.4
Avg.	—	34.2	58.2	41.3	67.7	50.6

[1] No yield data reported for Crossville due to all varieties winter killing.
[2] Decatur silt loam (2% to 5% slopes).
[3] Decatur silt loam (2% to 5% slopes).
[4] Dickson silt loam (2% to 5% slopes).
[5] Maury silt loam (2% to 5% slopes).
[6] Grenada and Calloway silt loam (0% to 5% slopes).
[7] Experimental—to be released soon.

Table 22. Yield and other characteristics of soft red winter wheat varieties evaluated at five locations in 1977

Variety	Yield	Avg. date headed	Date mature		Lodging	Plant ht.
			Knoxville	Jackson		
	Bu/A				%	In.
McNair 3001	63	4-30	6-10	5-28	37	38
Coker 747	58	4-29	6-9	5-28	33	34
McNair 1813	55	4-27	6-9	5-24	41	38
McNair 4823	50	5-6	6-20	5-30	13	36
Doublecrop	49	4-22	6-3	5-23	26	39
Beau	49	4-30	6-13	5.27	25	37
Sullivan	48	4-26	6-9	5-25	66	38
Arthur	47	4-28	6-9	5-26	36	38
Abe	46	4-30	6-13	5-27	39	37
Stoddard	45	4-29	6-9	5-27	50	43
Oasis	44	4-29	6-12	5-26	53	39

Table 23. Wheat: Yield of varieties evaluated for 2 years (1976-77) at five locations

Variety	Avg.	Knoxville	Greeneville	Springfield	Spring Hill	Jackson
			Bushels per acre			
Coker 747	56	52	70	54	65	40
McNair 4823	50	42	73	36	58	39
McNair 1813	47	46	45	46	52	48
Beau	47	40	50	41	59	46
Arthur	47	43	46	42	60	42
Stoddard	45	47	41	46	54	38
Abe	44	33	47	40	62	38
Oasis	43	38	43	41	58	35
Doublecrop	43	42	43	43	52	36

Table 24. Wheat: Test weight of varieties evaluated at five locations in 1977

Variety	Avg.	Greeneville	Knoxville	Spring Hill	Springfield	Jackson
			Pounds per bushel			
Coker 747	59	57	62	54	61	61
Beau	59	58	59	54	61	61
Sullivan	59	56	60	55	61	62
Doublecrop	58	56	59	54	62	61
Arthur	58	56	59	55	61	60
Oasis	58	56	59	54	60	60
Stoddard	58	55	58	53	60	62
Abe	58	57	57	54	60	60
McNair 1813	57	55	57	52	60	62
McNair 4823	57	57	58	52	56	60
McNair 3001	55	54	56	50	58	58

Table 25. Wheat: Yield and other characteristics of varieties evaluated at Milan in 1977 [1]

Variety	Yield	Stand Dec.	Stand March	Date headed	Date ready for harvest	Plant ht.
	Bu/A	%	%			In.
Arthur	52	90	90	4-26	6-1	31
McNair 1813	50	90	80	5-3	6-4	29
Stoddard	48	90	90	4-29	6-1	32
Doublecrop	44	95	90	4-24	6-1	28
Coker 747	44	90	85	5-1	6-6	28
Beau	42	80	75	4-29	6-4	26
Oasis	40	80	75	4-29	6-4	28
McNair 4823	40	90	80	5-3	6-6	26
Abe	37	85	80	5-1	6-4	26
L.S.D. (.05)	N.S.	—	—	—	—	—
C.V. %	14.6	—	—	—	—	—

Table 26. Wheat: Yield and other characterisics of hard red winter wheat evaluated at Springfield in 1977

Variety	Yield	Date headed	Plant height	Date mature
	Bu/A		In.	
DeKalb 589	39	4-29	38	6-1
Triumph Imp.	38	4-29	39	6-1
Exp. 4555 [1]	36	4-25	30	6-1
Satanta	31	5-5	36	6-6
Danne	31	5-1	40	6-1
Century II 2148	23	5-8	41	— [2]

[1] Experimental. Obtained from Greenbush Seed & Supply, Girard, Kansas.
[2] Missing data.

BARLEY

The barley varieties were evaluated at six locations in 1977. No yields are reported for Greeneville due to grain being damaged by wet weather and birds at harvest time. All barley varieties were winter killed at Crossville.

Volbar did not perform well in 1977 due to poor quality seed planted. This variety emerged slower than other varieties and was injured severely by the severe cold weather a few weeks after planting. Little or no winter injury to Volbar occurred at Springfield or Jackson, but severe injury was noted at Spring Hill and Knoxville. Barley Yellow Dwarf Virus disease was not severe on any of the small grain in 1976-77 probably due to the cold weather reducing the aphid population. The leading varieties in grain yield were Maury, Henry, and Monroe. The recommended varieties for 1977-78 are Keowee and Volbar.

Table 27. Barley: Grain yields of varieties evaluated in 1977 at four locations [1] [2]

Variety	Avg.	Knox-ville [3]	Spring field [4]	Spring Hill [5]	Jack-son [6]
			Bushels per acre		
Maury	60	48	70	73	48
Henry	58	41	68	70	54
Monroe	57	38	72	68	51
Keowee	51	48	74	61	46
Surry	51	37	64	58	46
Boone	51	39	64	56	44
Pike	41	28	52	26	57
Volbar [7]	37	24	66	0	59
L.S.D. (.05)	—	11.4	4.3	10.1	7.0
C.V. %	—	20.4	4.4	11.6	9.4
Avg.	—	38.0	66.3	58.7	50.4

[1] All varieties winter killed at Crossville.

[2] No yields reported for Greeneville due to grain being damaged by wet weather at harvest time.

[3] Decatur silt loam (2% to 5% slopes).

[4] Dickson silt loam (2% to 5% slopes).

[5] Maury silt loam (2% to 5% slopes).

[6] Grenada silt loam (0% to 2% slopes).

[7] Volbar emerged several days later than other varieties due to poor quality seed thus resulting in winter killing and low yields at several locations.

Table 28. Barley: Yield and other characteristics of varieties evaluated in 1977

Variety	Yield [1]	Date headed	Date Mature: Knox-ville	Date Mature: Jack-son	Lodg-ing [2]	Plant ht.
	Bu/A				%	In.
Maury	60	4-29	6-10	5-18	25	36
Henry	58	4-26	6-9	5-20	48	36
Monroe	57	5-1	6-11	5-20	46	36
Keowee	51	4-28	6-13	5-22	59	33
Surry	51	4-25	6-9	5-17	36	35
Boone	51	4-27	6-9	5-21	42	31
Pike	41	4-18	5-27	5-12	38	28
Volbar	37	4-30	6-20	5-26	51	41

[1] Avg. of four locations.

[2] Avg. of two locations.

Table 29. Barley: Yield of varieties evaluated for 2 years (1976-77) at four locations

Variety	Avg.	Knox-ville	Spring-field	Spring Hill	Jack-son
			Bushels per acre		
Monroe	62	59	60	62	65
Maury	61	60	62	65	58
Henry	60	61	57	62	59
Boone	60	62	60	63	55
Surry	58	58	60	57	59
Volbar	58	53	68	34	75
Pike	53	52	54	39	69

OATS

The fall-seeded oats were winter killed at all locations except Jackson and Springfield. Springfield produced good yields with Jackson being only fair. The varieties ranked the same in grain yield at both locations. Six spring oats were evaluated for forage and grain when planted in late February and early March at Knoxville in 1977. Dal produced the most forage at both planting dates. Clintland 60 was among the lowest spring oats in forage production. Cumberland, a winter oat, was included as a check. Forage and grain for all varieties were low. The recommended fall-seeded oats for 1977-78 are Coker 66-22 and Cumberland.

Table 30. Oats: Yields and other characteristics of varieties evaluated at Jackson in 1977 [1]

Variety	Yield	Stand March 21	Date headed	Date mature	Lodged	Plant ht.
	Bu/A	%			%	In.
Coker 70- 16	71	97	5-1	5-27	15	43
Coker 66-22	58	100	4-30	5-25	64	42
Cumberland	51	96	5-8	5-29	32	42
Salem	36	62	5-7	5-26	15	40
L.S.D. (.05)	11.0	—	—	—	—	—
C.V. %	12.8	—	—	—	—	—
Avg.	53.8	—	—	—	—	—

[1] Loring silt loam (0% to 2% slopes).

Table 31. Oats: Yield and other characteristics of varieties evaluated at Springfield in 1977

Variety	Yield	Date headed	Lodged	Plant ht.	Stand March 15
	Bu/A		%	In.	%
Coker 70-16	94	5-4	8	32	94
Coker 66-22	91	5-3	25	35	85
Cumberland	82	5-11	12	32	82
Salem	72	5-10	0	31	70
L.S.D. (.05)	7.6	—	—	—	—
C.V. %	5.6	—	—	—	—
Avg.	84.7	—	—	—	—

Table 32. Spring Seeded Oats: Yield and other characteristics of varieties planted on February 22 and March 10, 1977 at Knoxville

	Planted February 22					
Variety	Yield		Date headed	Date mature	Plant ht.	Test weight
	T/A [1]	Bu/A			In.	Lb/Bu
Dal	1.39	32	5-22	6-7	33	35
Noble	1.37	44	5-19	6-13	33	35
Otee	1.35	43	5-17	6-13	33	37
Jaycee	1.31	45	5-15	6-13	35	36
Lodi	1.27	13	5-30	6-27	37	31
Clintland 60	1.01	24	5-20	6-15	37	36
Cumberland [2]	0.99	40	5-18	6-14	30	37
L.S.D. (.05)	0.30		—	—	—	—
C.V. %	16.5		—	—	—	—

	Planted March 10					
Variety	Yield		Date headed	Date mature	Plant ht.	Test weight
	T/A	Bu/A			In.	Lb/Bu
Dal	1.44	27	5-26	6-23	33	34
Lodi	1.36	22	5-31	Late	36	34
Cumberland	1.20	30	5-20	6-24	30	35
Otee	1.19	31	5-18	6-15	33	36
Jaycee	1.17	36	5-18	6-15	34	36
Noble	1.06	34	5-19	6-17	32	35
Clintland 60	0.93	19	5-22	6-7	38	36
L.S.D. (.05)	0.23		—	—	—	—
C.V. %	10.7		—	—	—	—

[1] Tons of oven dry forage harvested in the early head stage.
[2] Winter oat included as a check.

TRITICALE

Triticale varieties were evaluated at five locations in 1977. The leading varieties in grain yield were 313A and 386A. All varieties of Triticale were winter killed at Crossville. Triticale 131 winter killed more at Knoxville and Spring Hill than any other variety evaluated. Triticale 876 and 522 lodged the most and 131 lodged the least.

Table 33. Triticale: Average yield and other characteristics of varieties evaluated at five locations in 1977

Variety	Yield	Date headed	Date mature [1]	Lodging	Plant ht.	Test weight
	Bu/A			%	In.	Lb/Bu
Triticale 313A	49	5-3	6-6	17	58	47
Triticale 386A	48	5-4	6-6	20	56	48
Triticale 876	43	5-15	6-10	62	59	48
Triticale 131	39	5-15	6-9	8	55	47
Triticale 522	38	5-16	6-10	66	63	48

[1] Average of two locations.

GRAIN SORGHUM

The grain sorghum tests were conducted at Knoxville, Spring Hill, Martin, and Ames Plantation.

At Martin and Ames Plantation a non-bird resistant variety test was conducted in addition to the regular bird resistant test.

The grain yields at Ames Plantation were reduced by dry weather and a few varieties received sorghum midge damage.

The highest grain producing varieties at Knoxville in 1977 were Coker XP-1590 BR, Acco BR-Y93, Pioneer brand B815, and McNair 656 BR. The leading varieties in grain yield at Spring Hill in 1977 were FFR GSA 1334, Funk G-516, McCurdy Birds-off 91, and McNair 656 BR. At Spring Hill Savanna 5 was the lowest grain producer whereas at Martin it was one of the highest in grain production. The other leading varieties at Martin in the bird resistant group were McNair 656 BR, Wilstar 1360, Pioneer brand B815, Acco BR-Y93, DeKalb BR64+, Funk G-516, and Coker XP 1590 BR. R.A. Bird Go 68 did not perform as well at Martin in 1977 as it had in previous years. All yields were low in the bird resistant group at Ames Plantation with no significant difference among grain yields. The 3-year average yield of the bird restistant varieties are shown in Table 41.

The grain yields of the non-bird resistant varieties in 1977 were higher than the bird resistant varieties at Ames Plantation, but again there was no significant difference among grain yields at the 5% level of probability. At Martin the leading non-bird resistant varieties in 1977 were N. K. brand 2778, Wilstar 1330, DeKalb E-59+, Acco R-1029A, and McNair 654.

Using a 3-year average for Ames Plantation and Martin the highest yielding non-bird resistant varieties were Acco R-1090, Acco R-1029A, McNair 550, McNair 654, and McNair 650.

Table 34. Grain Sorghum: Yield of bird resistant varieties evaluated at four locations in 1977

Variety	Avg.	Knoxville	Spring Hill	Martin	Ames Plantation
			Bushels per acre		
McNair 656BR	90	116	98	95	52
Wilstar 1360	90	114	97	90	58
Coker XP-1590BR	89	124	91	84	57
Pioneer brand B 815	89	116	96	88	54
Funk G 516	88	117	100	84	52
FFR GSA 1334	87	109	102	81	84
Acco BR-Y93	87	120	97	85	46
DeKalb BR 64+	85	112	94	85	50
DeKalb BR 65+	83	110	89	80	54
McCurdy Birds-off 91	82	105	99	74	48
Savanna 3	79	98	88	74	56
Savanna 5	77	109	54	93	52
RA Bird Go 68	75	103	88	59	48
McCurdy Birds-off 81	74	99	88	61	46
L.S.D (.05)	—	9.0	11.6	12.2	N.S.
C.V. %	—	5.7	8.9	10.5	17.6

Table 35. Grain Sorghum: Yield and other characteristics of bird resistant varieties evaluated at Knoxville in 1977 [1]

Variety	Yield	Plant height	Head type
	Bu/A	In.	Rating [2]
Coker XP-1590BR	124	50	3.0
Acco BR-Y93	120	51	2.3
Funk G-516	117	51	3.0
Pioneer brand B815	116	59	2.5
McNair 656BR	116	50	3.0
Wilstar 1360	114	48	3.0
DeKalb BR-64+	112	62	2.7
DeKalb BR-65+	110	51	1.7
Savanna 5	109	65	1.3
FFR GSA 1334	109	48	3.0
McCurdy Birds-off 91	105	48	3.0
RA Bird Go 68	103	49	3.0
McCurdy Birds-off 81	99	46	2.8
Savanna 3	98	48	3.0
L.S.D. (.05)	9.0	—	——
C.V. %	5.7	—	——

[1] Sequatchie loam (2% to 5% slopes).
[2] 1=tight and 3=open type head.

Table 36. Grain Sorghum: Yield and other characteristics of varieties evaluated at Spring Hill in 1977 [1]

Variety	Yield	Date headed	Plant height
	Bu/A		
FFR GSA 1334	102	7-17	44
Funk G-516	100	7-17	44
McCurdy Birds-off 91	99	7-19	47
McNair 656BR	98	7-17	41
Acco BR-Y93	97	7-15	47
Wilstar 1360	97	7-17	42
Pioneer brand B815	96	7-19	50
DeKalb BR-64+	94	7-18	56
Coker XP-1590 BR	91	7-17	41
DeKalb BR-65+	89	7-19	44
RA Bird Go 68	88	7-22	43
McCurdy Birds-off 81	88	7-16	39
Savanna 3	88	7-15	40
Savanna 5	54	7-18	55
L.S.D. (.05)	11.6	——	—
C.V. %	8.9	——	—

Table 37. Grain Sorghum: Yield and other characteristics of bird resistant varieties evaluated at Martin in 1977

Variety	Yield	Date headed	Head type	Lodged	Plant height
	Bu/A		(1-3)	%	In.
McNair 656BR	95	7-26	3.0	0	64
Savanna 5	93	7-24	1.0	0	75
Wilstar 1360	90	7-26	3.0	5	63
Pioneer brand B815	88	7-25	2.0	0	65
Acco BR-Y93	85	7-23	2.0	25	63
DeKalb BR64+	85	7-25	3.0	0	76
Funk G-516	84	7-26	3.0	0	64
Coker XP 1590BR	84	7-27	3.0	0	64
FFR GSA 1334	81	7-26	3.0	0	64
DeKalb BR65+	80	7-25	1.5	0	63
McCurdy B.O. 91	74	7-28	2.5	0	61
Savanna 3	74	7-26	3.0	0	63
McCurdy B.O. 81	61	7-25	2.5	0	51
R.A. Bird Go 68	59	7-28	2.5	0	58
L.S.D. (.05)	12.2	—	—	—	—
C.V. %	10.5	—	—	—	—

Table 38. Grain Sorghum: Yield and other characteristics of bird resistant varieties evaluated at Ames Plantation

Variety	Yield	Plant height	Head type	Midge damage
	Bu/A	In.	Rating [1]	Rating [2]
Wilstar 1360	58	49	2.3	2.7
Coker XP 1590 BR	57	50	2.7	2.0
Savanna 3	56	53	2.5	2.3
Pioneer brand B815	54	49	2.3	2.0
DeKalb BR-65+	54	51	2.2	4.0
FFR GSA 1334	54	46	2.5	2.7
Funk G-516	52	53	2.3	2.0
Savanna 5	52	54	1.7	1.3
McNair 656 BR	52	50	2.3	3.3
DeKalb BR-64	50	54	2.8	1.7
RA Bird Go 68	48	52	2.2	3.0
McCurdy Birds-Off 91	48	48	2.7	2.0
McCurdy Birds-Off 81	46	46	2.7	2.7
Acco BR-Y93	46	49	3.0	3.7
L.S.D. (.05)	N.S.	—	—	—
C.V. %	17.6	—	—	—

[1] 1=Tight and 3=open type head.

[2] 0=No damage and 10=severe damage.

Table 39. Grain Sorghum: Yield and other characteristics of non-bird resistant varieties evaluated at Martin in 1977

Variety	Yield	Date headed	Head type	Lodging	Plant height
	Bu/A		(1-3) [2]	%	In.
N.K. brand 2778	86	7-23	1.5	5	61
Wilstar 1330	85	7-22	2.0	20	63
DeKalb E-59+	81	7-24	2.0	0	57
Acco R-1029A	80	7-22	2.5	0	58
McNair 654	78	7-23	1.5	2	61
Wilstar 1225	76	7-23	2.0	5	55
McNair 650	75	7-24	2.0	0	57
DeKalb E-57b+	75	7-25	2.5	2	59
GSA ML135	74	7-22	2.0	0	53
Funk G-522	74	7-22	2.0	5	56
N.K. brand 2779	73	7-21	2.0	0	54
McNair 550	73	7-24	2.5	0	58
RA 811A GB	73	7-24	2.0	0	60
Acco R1090	73	7-24	2.5	2	57
Wilstar 1425	73	7-23	2.5	0	57
DeKalb C-42a+	72	7-21	3.0	30	54
DeKalb C-42y+	72	7-22	2.0	0	69
Funk G-589	71	7-22	1.0	0	58
DeKalb D-46	62	7-27	1.0	0	63
McNair 535	62	7-21	2.0	0	48
L.S.D. (.05)	11.6	—	—	—	—
C.V. %	11.0	—	—	—	—

[1] Henry silt loam (2% to 5% slopes).

[2] 1=open; 2=medium; and 3=open head.

Table 40. Grain Sorghum: Yield and other characteristics of non-bird resistant varieties evaluated at Ames Plantation in 1977

Variety	Yield	Head [1] Type	Plant Height	Sorghum Midge Damage
	Bu/A	(1-3)	In.	(1-10)
Wilstar 1330	73	1.5	52	1.5
DeKalb E-59+	70	2.2	50	2.5
Funk G-HW 3862	70	2.5	48	2.0
Acco R-1029-A	69	2.0	50	1.0
GSA ML-135	69	2.2	46	1.5
DeKalb E-57b+	67	2.5	49	2.5
Wilstar 1225	67	2.2	51	2.5
Acco R-1090	66	2.2	47	1.0
Wilstar 1425	63	3.0	51	2.5
Funk G-589	63	1.5	50	T
McCurdy M51YG	62	1.5	52	2.5
N.K. brand 2779	61	2.2	50	2.0
R.A. 811AGB	61	2.2	47	1.0
DeKalb C-42y+	60	2.5	57	2.0
Coker XP 10709	58	2.0	52	1.5
DeKalb D-46	58	1.2	53	2.5
Funk G-522	57	2.5	45	1.5
McNair 550	56	2.5	47	3.5
McNair 535	59	1.2	42	1.5
N.K. brand 2778	55	2.2	45	1.5
McNair 535	53	1.5	50	2.5
DeKalb C-42a+	51	2.2	54	2.5
Coker XP 7709	50	2.5	51	3.5
McNair 650	49	1.5	45	4.5
L.S.D. (.05)	N.S.	—	—	—
C.V. %	20.1	—	—	—

[1] 1=tight and 3=open heads.

Table 41. Grain Sorghum: Yield of bird resistant varieties evaluated at four locations for three years 1975-77

Variety	Avg. (1975-77)	Knox-ville	Spring Hill	Martin	Ames Planta-tion
			Bushels per acre		
McNair 656BR	106	125	110	111	78
Pioneer brand B815	100	116	106	108	70
RA Bird Go 68	97	115	105	99	68
McCurdy Birds-off 81	95	113	96	102	68
McCurdy Birds-off 91	90	105	86	100	68

Table 42. Grain Sorghum: Yields of non-bird resistant varieties evaluated at Martin and Ames Plantation for 3 years 1975-77

Variety	Avg. 1975-77	Martin	Ames Plantation
Acco R-1090	85	87	84
Acco R-1029A	85	92	78
McNair 550	84	89	79
McNair 654	83	91	75
McNair 650	83	90	76
DeKalb E-59+	81	89	81
DeKalb C-42a+	81	88	74
DeKalb C-42y	78	85	70

ALFALFA AND RED CLOVER

Alfalfa results are from tests seeded in 1971, 1975, and 1976. At Springfield the highest producing varieties for a 6-year period were Apa'achee, Delta, Flandria, Cherokee, Europa, Buffalo, and Cody. The seed supply of Apalachee, Delta, Flandria, Cherokee, and Europa is very short, especially in Tennessee. Buffalo and Cody have performed better at this location than at the other locations across the state. In the test seeded in 1976 at Springfield the highest performing varieties were Weevlchek, Atlas, Pioneer 522, Vangard, and Team. However, there was no significant difference among yields in 1976 or 1977.

At Jackson the five highest producing varieties, using a 2-year average, were Vangard, Saranac AR, Team, Apalachee, and Arc. Using a 2-year average at Spring Hill the leading varieties in yield were Saranac AR, Vangard, Aapalachee, Gladiator, Apollo and Arc.

The alfalfa yields at Knoxville were reduced by dry weather and anthracnose disease. There was no significant difference in total yield among varieties. However, the anthracnose resistant varieties should perform better than non-resistant varieties in future production due to the damage from anthracnose in 1977.

A small test was also conducted at Knoxville which contained varieties and experimentals that were not included in the regular variety trials. The leading varieties in this test were Atlas, Olympic, and RSW A2-Anl (an experimental). N.K. Ko-3 was slow to recover after harvest and did not perform well.

The red clover variety results are shown in Table 49. Kenstar, Kenland, and Redland had the highest average yields. Kenland performed better in 1977 than it had in the last few years.

Table 43. Alfalfa: Yields of varieties seeded in 1971 at Springfield [1]

Variety	1972-1977 avg.	1977	1976	1975	1974	1973	1972
				Tons per acre			
Apalachee	4.29	3.99	5.26	2.18	5.60	5.13	3.56
Delta	4.23	4.37	5.04	2.26	5.42	5.14	3.15
Flandria	4.18	3.64	5.11	2.17	5.38	5.11	3.64
Cherokee	4.12	3.71	4.98	2.08	5.05	5.24	3.66
Europa	4.09	3.53	5.18	2.06	5.27	4.99	3.52
Buffalo	4.08	4.31	4.79	2.12	4.95	5.10	3.24
Cody	4.06	4.28	4.92	2.16	5.00	5.03	2.98
Team	3.93	2.91	4.88	2.21	4.98	5.10	3.50
Saranac	3.88	2.91	5.03	2.01	4.60	5.14	3.57
Weevlchek	3.88	3.35	4.88	2.04	5.14	4.78	3.12
Rancher 400	3.64	2.57	4.81	1.98	4.38	4.81	3.30
Warrior	3.64	2.65	4.85	2.01	4.46	4.70	3.19
Pioneer brand 522	3.62	2.71	4.60	1.94	4.59	4.73	3.17
Glacier	3.15	1.86	3.95	1.73	3.67	4.66	3.04
L.S.D. (.05)	——	0.71	0.38	0.20	0.44	N.S	0.27
C.V. %	——	14.6	4.6	6.7	6.2	6.0	5.6

[1] Dickson silt loam (2% to 5% slopes).

Table 44. Alfalfa: Yield of varieties seeded in the spring of 1976 at Springfield

Variety	Avg.	1977	1976	Variety	Avg.	1977	1976
						T/A	
Weevlchek	5.36	5.06	5.65	K3-10	4.97	4.66	5.28
Atlas	5.33	5.06	5.60	Gladiator	4.91	4.54	5.28
Pioneer 522	5.30	5.07	5.53	Tempo	4.82	4.34	5.29
Vangard	5.23	5.08	5.39	Pioneer 530	4.78	4.48	5.09
Team	5.08	4.64	5.53	Williamsburg	4.56	4.04	5.09
Anchor	5.00	4.51	5.48	Lancer	4.49	4.00	4.99
Europa	4.96	4.38	5.55	KO-612	4.45	4.18	4.72
Titan	4.84	4.35	5.34				
L.S.D. (.05)	——	N.S.	N.S.		——	N.S.	N.S.
C.V. %	——	13.2	9.3		——	13.2	9.3

Table 45. Alfalfa: Yield of varieties seeded in 1975 at Jackson [1]

Variety	Avg.	1977	1976
		Tons per acre	
Vangard [2]	4.55	4.37	4.73
Saranac AR	4.54	4.66	4.43
Team	4.47	4.72	4.22
Apalachee	4.44	4.50	4.39
Arc	4.42	4.34	4.50
Apollo	4.35	4.27	4.43
Gladiator	4.30	4.64	3.96
Weevlchek	4.16	4.55	3.78
Williamsburg	4.16	4.64	3.68
Pioneer brand 520	4.16	4.71	3.60
Cody	4.14	4.71	3.58
N.K. 3-10	4.12	4.44	3.81
Lancer	4.12	4.42	3.81
Buffalo	4.10	4.58	3.62
Pioneer brand 521	4.09	4.21	3.97
N.K. Ko-612	3.66	4.20	3.12
L.S.D. (.05)	——	N.S.	.46
C.V. %	——	7.9	8.2

[1] Memphis silt loam (2% to 5% slopes).
[2] Evaluated in previous years as Victor.

Table 46. Alfalfa: Yield of varieties seeded in the spring of 1976 at Spring Hill [1]

Variety	Avg.	1977	1976
		Tons per acre	
Saranac AR	3.90	4.09	3.70
Vangard [2]	3.88	4.26	3.50
Apalachee	3.86	4.08	3.64
Gladiator	3.62	3.62	3.61
Apollo	3.54	3.79	3.28
Arc	3.52	3.93	3.10
Pioneer brand 521	3.47	3.51	3.43
Pioneer brand 520	3.46	3.24	3.67
Williamsburg	3.46	3.45	3.48
Team	3.38	3.48	3.28
Lancer	3.38	3.52	3.25
Cody	3.32	3.52	3.12
N.K. 3-10	3.26	3.20	3.33
Weevlchek	3.10	3.23	2.97
Buffalo	3.08	3.10	3.07
N.K. Ko-612	2.80	2.82	2.78
L.S.D. (.05)	——	.64	N.S.
C.V. %	——	12.7	11.1

[1] Maury silt loam (2% to 5% slopes).
[2] Evaluated in previous years as Victor.

Tabe 47. Alfalfa: Yield of varieties seeded in 1976 at Knoxville [1]

Variety	Yield	Variety	Yield
	T/A		T/A
Saranac AR	3.56	N.K. 3-10	3.22
N.K. Ko-612	3.45	Pioneer brand 521	3.18
Arc	3.37	Apollo	3.12
Lancer	3.34	Vangard	3.12
Gladiator	3.33	Pioneer brand 520	3.10
Cody	3.31	Williamsburg	3.04
Apalachee	3.26	Team	2.98
Buffalo	3.22	Weevlchek	2.88
L.S.D. (.05)	N.S.		N.S.
C.V. %	11.5		11.5

[1] Lindside and Captina silt loam (2% to 5% slopes).

Table 48. Alfalfa: Yield of 6 varieties seeded in 1976 at Knoxville

Variety	Yield	Variety	Yield
	T/A		T/A
Atlas	3.94	D69-A:1 w1	3.63
Olympic	3.91	Resitador II	3.20
RSW A2-An1	3.83	N.K. Ko-3	3.05
L.S.D. (.05)	.23		.23
C.V. %	4.2		4.2

Table 49. Red Clover: Yield of varieties evaluated at four locations in 1977

Variety	Avg.	Spring-field [1]	Spring Hill	Jack-son [3]	Mar-tin [4]
			Tons per acre		
Kenstar	3.48	2.58	2.73	4.05	4.54
Kenland	3.34	2.57	2.51	4.10	4.18
Redland	3.26	2.59	2.66	3.78	4.00
Arlington	3.01	2.58	2.54	3.47	3.45
Redman	2.93	2.60	2.48	3.68	3.96
L.S.D. (.05)	——	N.S.	N.S.	N.S.	.68
C.V. %	——	5.5	10.2	12.1	11.0

[1] Dickson silt loam (2% to 5% slopes).
[2] Maury silt loam (2% to 5% slopes).
[3] Memphis silt loam (0% to 2% slopes).
[4] Falaya silt loam (2% to 5% slopes).

SUMMER ANNUALS
(Sorghum X Sundangrass Crosses, and Sudangrass)

Twenty summer annual cultivars were evaluated in 1977 for forage production at Knoxville. All varieties yielded well.

The leading Sorghum X Sudangrass Crosses in 1977 were Sudax S-17, Sweet Sioux IV, NAPB-77-22-01, Mor Su II, Sordan 70A, and Sudax SX-16a.

For the past 2 years Sweet Sioux IV, Sudax SX-17, Sordon 70A, Trudan 5 (Sudangrass), and Mor Su II performed well.

Table 50. Yields of summer annual varieties and hybrids evaluated at Knoxville in 1977[1]

Variety	Oven dry forage T/A	Variety	Oven dry forage T/A
Sorghum X Sudangrass Crosses		**Sorghum X Sudangrass Crosses**	
Sudax SX-17	4.70	Drip-o-Honey	4.30
Sweet Sioux IV	4.67	Sudax SX-16	4.27
N.A.P.B. 77-22-01	4.62	FFR 66	4.25
Mor Su II	4.54	Sordan 77	4.20
Sordan 70A	4.50	Trudan 7 [2]	4.19
Sudax SX-16a	4.50	Tastemaker	4.19
Sudax SX-7+	4.41	Wandergraze	4.11
Trudan 5 [2]	4.40	McNair 711A	4.04
Graze-N-Bale	4.38	Acco S99	4.01
Sweet M	4.34	FFR 74	3.91
L.S.D. (.05)	N.S.		N.S.
C.V. %	9.2		9.2

[1] Sequatchie loam (2% to 5% slopes).

[2] Sudangrass.

Table 51. Yields of summer annual varieties and hybrids evaluated at Knoxville for 2 years (1976-77)

Variety	Oven dry forage T/A	Variety	Oven dry forage T/A
Sorghum X Sudangrass Crosses		**Sorghum X Sudangrass Crosses**	
Sweet Sioux IV	3.75	Drip-o-Honey	3.55
Sudax SX-17	3.67	FFR-66	3.52
Sordan 70A	3.67	Graze-n-Bale	3.46
Trudan 5 [1]	3.61	Wandergraze	3.34
Mor Su II	3.60	McNair 711A	3.32
Sweet M	3.58	Acco S-99	3.24
Sudax SX-16a	3.57	FFR-74	3.16
Sudax SX-16	3.56		

[1] Sudangrass.

Summer annuals tested and the seed company originating each cultivar

Company	Variety or hybrid	Company	Variety or hybrid
	Sorghum X Sudangrass Crosses		**Sorghum X Sudangrass Crosses**
DeKalb	Sudax SX-7+	Northrup King	Sordan 70A
DeKalb	Sudax SX-16	Northrup King	Sordan 77
DeKalb	Sudax SX-16a	Northrup King	Wandergraze
DeKalb	Sudax SX-17	McCurdy	Sweet M
Acco	Sweet Sioux IV	Farmer Forage Research	FFR-66
Acco	S-99	Farmer Forage Research	FFR-74
McNair	711A	Wilstar	Graze-N-Bale
McNair	Drip-o-Honey	Wilstar	Tastemaker
N.A.P.B.	Mor Su II		
N.A.P.B.	77-22-01		Sudangrass
		Northrup King	Trudan 5
		Northrup King	Trudan 7

SOYBEANS

Soybean varieties were evaluated in 1977 at Greeneville, Knoxville, Crossville, Springfield, Spring Hill, Martin, Jackson, Milan, and Ames Plantation.

Three early maturing variety tests were conducted at Crossville, Springfield, and Milan. Two early maturing strains tests were conducted at Jackson and Martin. Also at Jackson a strains test consisting of varieties in Maturity groups V and VI were evaluated in addition to several commercial varieties in a Benlate test at Jackson. Tests at all other locations contained varieties in Maturity groups V or VI with a few varieties in group VII. Essex, SSF 500N, Coker 75-842, and Coker 136 performed well in 1977 at Greeneville with SSF 500N producing the highest yield. The three leading varieties at Knoxville were McNair 500, N. K. Multivar 100, and SSF 500N.

The yields at Spring Hill were low due to dry weather. Essex performed the best at this location. At Springfield the leading varieties in 1977 were Essex, Forrest, and N. K. Multivar 100. At Crossville in Matturity group V and VI tests Forrest and Essex were the highest seed producers. Coker 75-842 and Green Soy 74-64 seemed to be too late for this location because they did not mature before the first frost.

in Maturity group V and VI test Forrest and Essex were the highest SSF 500N, Essex, Bedford, and McNair 500. The varieties that resisted lodging the best at this location were Essex, McNair 500, and Green Soy 74-82 (Table 56).

At Martin under cyst nematode free conditions, Forrest and SSF

500N yields were reduced in some replications where the soil pH was 7 or above. This variation from replication to replication resulted in no significant difference among yields in this test at Martin. When the varieties were evaluated under cyst nematode conditions at Martin, the leading varieties were Centennial, Pickett 71, and Forrest (Table 58).

The soybean yields at Ames Plantation were low due to severe dry weather; also the varieties with cyst nematode resistance performed well (Table 60). Pickett 71 produced 39 bushels per acre and FFR 556 only 17.

Using an average across seven locations in 1977 the highest producing varieties were Essex, SSF 500N, Forrest, McNair 500, N. K. Multivar 100, and Coker 75-842. A 2- or 3-year average was not done because most of these varieties were evaluated for the first time in 1977.

For several years early maturing varieties (Maturity groups III and IV) have been evaluated at several locations in Tennessee. Many of these early maturing varieties have produced high yields. The 1977 data for these early varieties are presented in Tables 62 through 66. At Crossville (Table 62) Mitchell and RA(C)36 produced the highest yields. Essex, RA 135(a), and SRF 450 yielded 44 bushels per acre at this location. Essex (Maturity group V) has been used as a check variety in most of these early maturing tests (Maturity groups III and IV), and has yielded as well or better than most of the early maturing varieties. Mitchell has produced well in most of these early maturing tests.

If varieties of Maturity Groups III and IV are to be grown, they should be grown on a small acreage because if they are not harvested when they first become mature, they may shatter or deteriorate in the pod if rainy weather persists for any length of time after maturity. Also, if the very early varieties are planted late (July 15), in many cases they will not produce as much plant growth before flowering as some later-maturing varieties, such as Forrest, Essex, York, etc. These early-maturing varieties will produce good yields but their limitation should be realized before planting large acreages. Under good weather conditions there may be no problem in harvesting these early-maturing varieties; however, under adverse weather conditions, poor weed control—which may delay harvest—can cause some problem with these early-maturing varieties. In some years, these early varieties could be harvested before bad weather starts.

Table 52. Soybeans: Yields of soybean varieties evaluated at seven locations in 1977

Variety	Avg.	Knoxville [1]	Greeneville [2]	Spring Hill [3]	Springfield [4]	Milan [5]	Martin [6]	Ames Plantation [7]
				Bushels per acre				
Essex	45	54	59	27	50	61	42	24
SSF 500N	45	58	60	19	43	63	41	29
Forrest	43	53	48	19	46	65	41	32
McNair 500	43	58	53	16	45	60	49	22
N.K. Multivar 100	42	58	50	18	48	58	40	25
Coker 75-842	42	47	56	20	40	58	43	29
Centennial	41	46	51	18	36	54	47	37
Coker 136	41	53	55	22	33	53	48	21
Pickett 71	41	43	46	22	36	55	42	39
R.A. 501	39	45	48	21	42	53	41	26
Bedford	39	49	43	17	43	61	42	21
Green Soy 74-64	38	51	55	20	30	55	30	24
FFR 556	37	43	52	16	36	53	44	17
R.A. 526	36	43	41	14	39	53	42	24
N.K. Entry 30	35	40	51	11	40	52	34	20
McNair 600	—	44	54	12	—	52	—	21
FFR 666	—	—	—	—	—	55	—	—
Lancer	—	—	—	—	—	51	43	22
Green Soy 74-82	—	—	—	—	—	53	—	23
Coker 237	—	—	—	—	—	—	—	21
Agri Pro AP 70	—	—	—	—	—	—	—	18
L.S.D. (.05)	—	7.4	8.1	6.6	7.8	4.6	N.S.	7.0
C.V. %	—	7.8	11.0	25.3	13.5	5.7	17.8	18.5

[1] Sequatchie silt loam (2% to 5% slopes).
[2] Hermitage silt loam (2% to 5% slopes).
[3] Maury silt loam (2% to 5% slopes).
[4] Huntington silt loam, local alluvium (2% to 5% slopes).
[5] Collins silt loam (2% to 5% slopes).
[6] Collins silt loam (2% to 5% slopes).
[7] Memphis silt loam (2% to 5% slopes).

Table 53. Soybeans: Yield and other characteristics of varieties evaluated at Knoxville in 1977 [1]

Variety	Yield	Date full bloom	Date mature	Plant height	Lodging
	Bu/A			In.	%
McNair 500	58	7-24	10-17	38	10
SSF 500 N	58	7-24	10-17	43	24
N.K. Multivar 100	58	7-24	10-14	35	46
Essex	54	—— [2]	10-4	36	41
Coker 136	53	—— [2]	10-17	43	26
Forrest	53	—— [2]	10-17	42	19
Green Soy 74-64	51	7-26	11-4	42	38
Bedford	49	7-25	10-18	47	65
Coker 75-842	47	7-28	11-4	41	72
Centennial	46	7-26	10-30	44	48
RA 501	45	7-20	10-19	49	89
McNair 600	44	7-26	10-26	39	41
FFR 556	43	7-24	10-27	53	78
Pickett 71	43	7-30	10-27	36	70
RA 526	43	7-20	10-6	39	90
N.K. Entry 30	40	7-24	10-29	49	66
L.S.D. (.05)	5.4	—	—	—	—
C.V. %	7.8	—	—	—	—

[1] Sequatchie loam (2% to 5% slopes).
[2] Missing data.

Table 54. Soybeans: Yield and other characteristics of varieties evaluated at Crossville in 1977 [1]

Variety	Yield	Date 1st flower	Date last flower	Flower color [2]	Date mature	Plant height
	Bu/A					In.
Forrest	43	7-15	8-4	W	10-3	38
Essex	42	7-11	8-1	P	9-21	37
SSF 500 N	40	7-13	8-4	W	10-3	36
RA 501	39	7-15	8-16	P	9-30	50
N.K. Multivar 100	38	7-12	8-4	P	9-28	38
Coker 75-842	38	7-25	8-26	W	Frost	42
Bedford	38	7-24	8-22	W	10-1	47
Green Soy 74-64	37	7-18	8-22	W	Frost	43
N.K. Entry 30	35	7-19	8-26	W	10-3	46
FFR 556	33	7-16	8-24	P	10-8	53
L.S.D. (.05)	5.4	——	——	—	——	—
C.V. %	10.1	——	——	—	——	—

[1] Hartsells loam (2% to 5% slopes).
[2] W=White and P=Purple.

Table 55. Soybeans: Yield and other characteristics of varieties evaluated at Spring Hill in 1977 [1]

Variety	Yield	Date 1st flower	Date full bloom	Date mature	Plant height
	Bu/A				In.
Essex	27	6-26	7-8	9-20	28
Coker 136	22	7-12	7-19	10-10	36
Pickett 71	22	7-18	7-26	10-17	32
RA 501	21	7-8	7-13	9-28	39
Coker 75-842	20	7-16	7-25	— [2]	35
Green Soy 74-64	20	7-13	7-26	— [2]	39
Forrest	19	7-4	7-14	9-24	37
SSF 500N	19	7-6	7-14	9-28	36
Centennial	18	7-11	7-20	— [2]	41
N.K. Multivar 100	18	7-5	7-13	9-28	33
Bedford	17	7-13	7-19	9-28	44
McNair 500	16	7-10	7-18	9-28	34
FFR 556	16	7-6	7-19	10-17	49
RA 526	14	7-9	7-17	9-24	33
McNair 600	12	7-16	7-22	10-17	41
N.K. Entry 30	11	7-14	7-23	10-17	39
L.S.D. (.05)	6.6	—	—	—	—
C.V. %	25.3	—	—	—	—

[1] Maury silt loam (2% to 5% slopes).

[2] Killing frost before maturity.

Table 56. Soybeans: Yield and other characteristics of varieties evaluated at Milan in 1977 [1]

Variety	Yield	Date 1st flower	Flower color [3]	Date last flower	Color [4] of pubes-cence	Date matures	Plant height	Lodging	Shatter-ing
	Bu/A						In.	%	(0-5)
Forrest	65	7-14	W	8-22	T	10-8	48	60	0
SSF500N	63	7-12	W	8-22	T	10-12	44	90	0
Essex	61	7-9	P	7-16	G	10-2	40	20	1
Bedford [2]	61	7-22	W	8-22	T	10-18	48	90	0
McNair 500	60	7-16	P	8-29	T	10-21	49	20	0
Coker 75-842	58	7-25	W	8-30	G	10-29	44	90	0
N.K. Multivar 100	58	7-11	P	8-22	G	10-15	46	90	0
Pickett 71	55	7-25	P	9-2	G	10-26	46	90	0
FFR 666	55	7-22	P	9-4	T	10-24	48	90	0
Green Soy 74-64	55	7-16	W	8-25	G	10-29	43	80	0
Centennial	54	7-16	P	9-2	T	10-21	44	90	0
FFR 556	53	7-16	P	8-29	G	10-21	60	80	0
Coker 136	53	7-22	P	8-22	G	10-12	53	40	0
RA 526	53	7-16	P	8-22	T	10-2	44	95	0
RA 501	53	7-14	P	8-22	T	10-12	41	100	2
Green Soy 74-82	53	7-11	W	8-18	G	10-2	44	25	0
McNair 600	52	7-25	P	9-2	T	10-26	46	90	0
N.K. Entry 30	52	7-25	W	9-4	T	10-29	48	95	0
Lancer	51	7-25	P	9-2	G	10-26	46	70	0
L.S.D. (.05)	4.6	—	—	—	—	—	—	—	—
C.V. %	5.7	—	—	—	—	—	—	—	—

[1] Collins silt loam (2% to 5% slope).
[2] Evaluated in the past as J74-46.
[3] W=White and P=Purple.
[4] T=Tawny and G=Gray.

Table 57. Soybeans: Yield and other characteristics of varieties evaluated at Martin in 1977 [1]

Variety	Yield	Pubescence color [2]	Flower color [3]	Date 1st flower	Plant height	Lodging	Date ready for harvest
	Bu/A				In.	%	
McNair 500	49	T	P	7-23	40	30	10-7
Coker 136	48	G	P	7-24	47	75	10-22
Centennial	47	T	P	7-24	45	60	10-28
FFR 556	44	G	P	7-20	61	70	10-22
Coker 75-842	43	G	W	8-1	46	60	10-26
Lancer	43	G	P	7-27	48	75	10-24
RA 526	42	T	P	7-25	41	50	10-3
Pickett 71	42	G	P	8-1	35	100	10-30
Essex	42	G	P	7-13	37	20	10-17
Belford	42	T	W	7-27	54	50	10-17
SSF 500 N	41	T	W	7-18	39	50	10-18
Forrest	41	T	W	7-18	44	40	10-20
RA 501	41	T	P	7-18	55	70	10-10
N.K. Multivar 100	40	T&G	P&W	7-17	35	40	10-15
N.K. Entry 30	34	T	W	7-30	47	60	10-26
Green Soy 74-64	30	G	W	7-23	48	20	10-29
L.S.D. (.05)	N.S.	—	—	—	—	—	—
C.V. %	17.8	—	—	—	—	—	—

[1] Collins silt loam (2% to 5% slopes).
[2] G=Grey and T=Tawny.
[3] P=Purple and W=White.

Table 58. Soybeans: Yield and other characteristics of varieties evaluated under cyst nematodes condition at Martin in 1977[1]

Variety	Yield	Date first flower	Flower color [2]	Pubescence color [3]	Plant Height	Lodging	Date ready for harvest
	Bu/A				In.		
Centennial	32	7-23	P	T	35	75	10-26
Pickett 71	30	8-2	P	G	32	100	10-27
Forrest	30	7-19	W	T	34	20	10-5
Coker 75-842	28	7-31	W	G	34	10	10-26
RA 501	27	7-22	P	T	44	60	10-5
Bedford [4]	26	7-25	P & W	T & G	42	20	10-7
N.K. Multivar 100	26	7-20	W	T	33	5	10-7
Lancer	25	7-29	P	G	32	2	10-28
SSF 500N	25	7-21	W	T	40	5	10-9
Essex	25	7-16	P	G	28	2	9-29
McNair 500	25	7-23	P	T	35	0	10-4
Coker 136	24	7-25	P	G	32	2	10-9
RA526	24	7-23	P	T	33	5	10-5
Green Soy 74-64	24	7-27	W	G	35	20	10-26
N.K. Entry 30	24	7-28	W	T	46	60	10-27
FFR556	23	7-21	P	G	40	5	10-9
L.S.D. (.05)	7.3	—	——	——	—	—	—
C.V. %	19.5	—	——	——	—	—	—

[1] Grenada silt loam (2% to 5% slopes).
[2] P=Purple and W=White.
[3] G=Gray and T=Tawny.
[4] Tested in previous years as J-74-46.

Table 59. Soybeans: Yield and other characteristics of varieties evaluated at Jackson in 1977[1,2]

Variety	Yield	Date 1st flower	Date last flower	Plant height	Date mature
	Bu/A			In.	
Pickett 71	39	7-20	8-31	48	10-28
Centennial	35	7-18	8-31	50	10-27
Lee 74	34	7-19	8-29	48	10-30
FFR 666	33	7-19	8-29	46	10-26
York	32	7-6	8-2	46	10-4
Bedford	31	7-15	8-10	52	10-7
Forrest	30	7-8	8-3	47	10-6
Mitchell	29	6-15	7-26	44	9-3
Bragg	28	7-24	9-1	53	11-3
Dare	25	7-5	8-3	47	10-2
Essex	25	7-2	7-28	36	9-26
Coker 136	24	7-11	8-5	51	10-5
L.S.D. (.05)	7.4	—	—	—	—
C.V. %	17.0	—	—	—	—

[1] Grenada silt loam (0% to 2% slopes).

[2] Seeded May 12, 1977.

Table 60. Soybeans: Yield and other characteristics of varieties evaluated at Ames Plantation in 1977 [1]

Variety	Yield	Lodging	Date mature	Plant height
	Bu/A	%		In.
Pickett 71	39	6	10-24	31
Centennial	37	6	10-24	38
Forrest	32	3	10-13	34
Coker 75-842	29	5	10-24	38
SSF 500N	29	3	10-11	34
FFR 666	28	4	10-20	29
RA 501	26	12	10-3	44
N.K. Multivar 100	25	2	10-3	32
Essex	24	1	9-21	22
Green Soy 74-64	24	3	10-24	38
RA 526	24	2	9-26	29
Green Soy 74-82	23	1	9-26	28
Lancer	22	2	10-11	30
McNair 500	22	2	9-30	34
Coker 73-370	21	3	10-24	34
Coker 136	21	2	10-3	34
McNair 600	21	6	10-20	39
Bedford	21	6	10-11	41
N.K. Entry 30	20	4	10-24	44
Agri Pro AP 70	18	3	11-1	42
FFR 556	17	6	10-13	50
C.V. %	7.0	—	—	—
	18.5	—	—	—

[1] Memphis silt loam (2% to 5% slopes).

Table 61. Soybeans: Yield and other characteristics of new strains evaluated at Jackson in 1977 [1]

Variety	Yield	Date		Flower color [2]	Plant height	Date mature	Seed quality [3]	Purple seed stain [4]	Shattering [5]	Lodging [6]
		1st flower	Last flower							
	Bu/A				In.		Rating	Rating	Rating	Rating
McNair 3152	36	7-21	8-30	W	50	11-2	2.0	3.0	1.0	2.1
McNair 3130	34	7-14	8-10	W	52	10-16	2.0—	2.0	1.0	1.0
McNair 3181	33	7-12	8-26	P	48	10-28	1.5	2.0	1.2	1.0
SSF-503	33	7-3	7-28	P	36	9-24	3.0	3.0	3.8	1.0
Green Soy 75-61	32	7-8	8-3	P	54	10-20	3.0	4.0	1.8	1.0
Forrest	32	7-8	7-28	W	49	10-6	2.5	4.0	2.0	1.0
Green Soy 75-18	31	7-8	8-18	W	50	10-29	2.0	3.0	1.0	1.4
SSF-502	31	7-12	8-8	W	51	10-2	3.5+	4.5	1.5	1.8
McNair 3161	29	7-15	8-7	P	49	10-14	2.0	3.0	1.0	1.0
SSF-602	29	7-10	8-15	P	48	11-1	1.5	2.0	1.0	1.8
Green Soy 75-72	29	7-19	8-20	P	50	10-30	1.5	2.5	1.0	1.8
SSF-504	25	7-5	8-3	P	58	10-13	2.0	4.0	1.2	1.0
RA-601	20	7-8	8-9	P	62	10-8	2.5	3.5	2.0	1.8
L.S.D. (.05)	6.8	—	—	—	—	—	—	—	—	—
C.V. %	15.5	—	—	—	—	—	—	—	—	—

[1] Memphis silt loam (0% to 2% slopes).
[2] W=White and P=Purple.
[3] 1=Very Good and 5=Very Poor.
[4] 1=Slight and 5=Severe Purple Stain.
[5] 1=No Shattering and 5=Over 20% Shattered.
[6] 1=Almost All Plants Erect and 5=All Plants Down Badly.

Table 62. Soybeans: Yield and other characteristics of early maturing varieties evaluated at Crossville in 1977 [1]

Variety	Yield	Date 1st flower	Date last flower	Flower color [2]	Maturity	Plant height	Lodging
	Bu/A					%	In.
Mitchell	52	6-27	7-25	P	9-7	42	48
RA (c)36	49	6-27	7-25	P	9-13	56	52
Essex	44	7-12	7-29	P	9-20	38	21
RA 135(a)	44	7-3	7-25	P	9-17	45	14
SRF 450	44	6-27	7-25	P	9-7	43	38
SSF 403	42	6-27	7-25	P	9-7	42	22
SRF 425	37	6-27	7-20	W	9-9	42	45
SRF 350	37	6-25	9-20	W	8-30	37	55
FFR 444	34	6-26	7-25	P	9-5	42	52
SSF 402	31	6-25	7-18	W	8-26	38	21
L.S.D. (.05)	3.3	—	—	—	—	—	—
C.V. %	5.4	—	—	—	—	—	—

[1] Hartsells loam (2% to 5% slopes).
[2] W=White and P=Purple.

Table 63. Soybeans: Yield and other characteristics of early maturing varieties evaluated at Springfield

Variety	Yield	Lodging	Plant height
	Bu/A	%	In.
RA135(a)	61	0.8	43
Essex	58	1	32
Mitchell	54	34	41
SRF 350	51	48	36
SRF 425	51	27	40
FFR 444	51	31	40
SRF 450	47	17	42
RA(c)36	46	56	40
SSF 402	43	13.	31
SSF 403	37	23	40
L.S.D. (.05)	8.8	—	—
C.V. %	12.3	—	—

Table 64. Soybeans: Yield and other characteristics of early maturing soybean varieties evaluated at Milan in 1977 [1]

Variety	Yield	Date 1st flower	Flower color [2]	Date last flower	Color [3] of pubes-cence	Date mature	Plant height	Lodging	Shatter-ing
	Bu/A						In.	%	(0-5)
Essex	67	7-9	P	8-16	G	10-2	36	20	0
SRF-450	57	6-22	P	8-1	T	9-4	40	85	2
Mitchell	57	6-22	P	8-1	T	9-4	44	90	1
RA 135(A)	57	6-28	P	8-1	G	10-2	39	30	0
RA (C)36	54	6-24	P	8-1	T	9-10	38	90	0
FFR 444	48	6-24	P	8-1	T	9-1	38	60	2
SSF 403	48	6-24	P	7-28	T	9-10	38	80	1
SRF 425	47	6-22	W	7-28	T	9-4	42	90	1
SRF 350	44	6-20	W	7-28	T	9-4	39	90	2
SSF 402	42	6-21	W	7-28	T	9-4	38	100	1
L.S.D. (.05)	6.2	—	—	—	—	—	—	—	—
C.V. %	7.0	—	—	—	—	—	—	—	—

[1] Collins silt loam (2% to 5% slopes).
[2] P=Purple & W=White.
[3] T=Tawny & G=Gray.

Table 65. Soybeans: Yield and other characteristics of early maturing varieties evaluated at Martin in 1977 [1]

Variety	Yield	Date 1st flower	Date ready for harvest
	Bu/A		
RA 125(a)	36	7-5	10-9
K-10-17	34	7-2	10-5
Mitchell	34	7-1	9-30
FFR 444	32	7-2	9-28
L.S.D. (.05)	N.S.	—	—
C.V. %	19.4	—	—

[1] Grenada silt loam (2% to 5% slopes).

Table 66. Soybeans: Yield and other characteristics of varieties and new strains evaluated at Jackson in 1977 [1]

Variety	Yield	Date 1st flower	Date last flower	Date mature	Plant height
	Bu/A				
K-1019	30	6-16	7-28	9-20	43
Mitchell	29	6-16	7-27	9-3	43
K-1017	29	6-15	7-28	9-18	46
SSF-404	25	6-18	7-26	9-6	44
L-71L-436B	24	6-18	7-22	9-8	48
SSF-303	23	6-16	7-20	8-29	44
FFR-444	21	6-17	7-25	8-30	46
L.S.D (.05)	5.8	—	—	—	—
C.V. %	15.0	—	—	—	—

[1] Grenada silt loam (0% to 2% slopes).

DARK TOBACCO

The dark fire-cured and dark air-cured tobacco varieties were evaluated at Springfield. The 1977 data are not available so the data included in this report are for 1974 through 1976. DF-911, a multiple-disease resistant, dark fire-cured variety, was developed and released in 1976 by the University of Tennessee Agricultural Experiment Station. DF-911 is resistant to black root rot, mosaic, and wildfire. It is not resistant to black shank. DF-911 is slightly darker in color and a little more open in growth habit than Madole and the leaf attachment is more upright. DF-911 has performed similar to Madole (Table 67).

In the dark air-cured test the leading varieties in 1976 were Ky 160 and OS 806, an experimental (Table 68).

Table 67. Dark Fire-cured Tobacco: Average yield and acre value of varieties grown at Springfield in 1974, 1975, and 1976

Variety	Acre yield				Acre value [1]			
	Avg.	1976	1975	1974	Avg.	1976	1975	1974
	Pounds per acre				Dollars per acre			
Tennex 917 [2]	2307	1857	2431	2634	1200	955	1342	1305
DF-911	2273	1895	2392	2533	1145	984	1283	1168
Madole	2262	1749	2620	2416	1178	832	1518	1184
Tennex 916	2255	1845	2426	2492	1139	952	1273	1194
Ky. 171	2165	1691	2316	2488	1154	868	1305	1290
Tennex 915	2130	1518	2452	2421	1084	748	1348	1156
Tennex 805	—	1885	—	—	—	935	—	—
Tennex 918	—	1866	—	—	—	970	—	—
Tennex 804	—	1772	2813	—	—	871	1352	—
Tennex 803	—	1605	2371	—	—	754	1284	—
Tennex 914	—	—	2441	2564	—	—	1327	1165
Tennex 912	—	—	2431	2457	—	—	1288	1161
Black Mammoth	—	—	—	2660	—	—	—	1284
DF-300	—	—	—	2411	—	—	—	1158
L.S.D. (.05)	—	197.0	112.6	N.S.	—	106.7	99.0	N.S.
C.V. %	—	8.7	3.9	6.5	—	9.6	5.8	8.8

[1] These values are based on the average value for the various grades on all type 22 markets during the 5-year period, 1965-1969.
[2] All with Tennex numbers are experimentals.

Table 68. Dark Air-cured Tobacco: Average yield and acre value of varieties grown at Springfield in 1974, 1975, and 1976

Variety	Acre yield				Acre value [1]			
	Avg.	1976	1975	1974	Avg.	1976	1975	1974
	Pounds per acre				Dollars per acre			
Ky. 160	2009	1778	2199	2050	975	891	1267	767
OS 800 [2]	1912	1672	2114	1951	908	790	1192	740
OS 801	1900	1494	2264	1942	890	671	1272	726
OS 802	1882	1529	2151	1964	885	724	1187	745
OS 803	1806	1544	2027	1848	852	713	1122	721
OS 806	—	1862	2429	—	—	836	1260	—
OS 804	—	1634	2221	—	—	747	1228	—
OS 805	—	1471	2210	—	—	684	1169	—
OS 906	—	—	—	2070	—	—	—	813
OS 905	—	—	—	1972	—	—	—	748
L.S.D. (.05)	—	135.8	206.9	93.3	—	74.2	N.S.	35.3
C.V. %	—	6.5	6.4	3.6	—	7.6	7.2	3.6

[1] These values are based on the average value for the various grades on all type 35 markets during the 5-year period, 1965-1969.
[2] All with OS numbers are experimentals.

BURLEY TOBACCO[1]

C. L. Gupton and T. C. Corbin [2]

The commercial potentials of several varieties and hybrids of burley tobacco were assessed in terms of yield, market value, grade, disease resistance, and plant characteristics. The data were taken in 1974, 1975, and 1976 at three locations.

In 1974, good growing conditions prevailed at Greeneville. There was adequate rainfall at Spring Hill until almost flowering time; then a drought occurred and the plants never recovered. At Springfield, there was excessive rainfall near transplanting time followed by drought. Then heavy rainfall in late August delayed harvesting. An early freeze damaged tobacco in the barn. The 1975 growing season was generally too dry at Greeneville but was almost ideal at Spring Hill. It was dry at Springfield early in the season, but late rains contributed to a fairly high-yielding crop. The growing season was generally hot and dry at Greeneville and Springfield in 1976. The crop at Spring Hill was discarded because of water damage in early July.

Yields of the varieties are presented in Table 1. Ky. 14, MS Ky. 14 x L8, Ky. 10, and MS Burley 21 x Ky. 10 usually produced the highest yields, followed closely by Va. 509. Burley 37 and Burley 49 were generally lowest in yield, and the other varieties were intermediate.

Varieties differed practically none in market value per hundredweight (Table 2). All of the varieties produced about the same average percentage of tobacco usable to the trade (Table 3). These data indicate that, under current conditions, price and usability to the manufacturers are not among the primary criteria in selecting a variety.

The presence of disease on a farm is generally the most limiting factor in the choice of a variety. Race 1 of the black shank organism may present a serious problem under a continuous culture of hybrids involving L8. Burley 37, Burley 49, Va. 509, and Burley 64

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[1] Cooperative investigations of the Southern Region, Agricultural Research Service, U.S. Department of Agriculture and the Department of Plant and Soil Science, Tennessee Agricultural Experiment Station, Knoxville, Tennessee 37901.

[2] Research Geneticist and Agricultural Research Technician, respectively, Southern Region, Agricultural Research Service, U.S. Department of Agriculture, Greeneville, Tennessee 37743.

are usually resistant to both races. However, the level of resistance in Va. 509 appears to be lower than the others, especially where it was planted after an L8 hybrid that had black shank (Table 4). In 1975 all of the resistant varieties were erratic in performance, showing good resistance under some conditions and very poor resistance under others (Table 4). It appears that none of our sources of resistance is good enough under continuous tobacco culture in soil heavily infested with black shank organisms. More attention needs to be directed to rotations, liming practices, and fertilization practices which would help transplants get a better start and reduce stress during the growing season.

Although Burley 37 is resistant, MS Burley 37 x L8 is not resistant to race 1 of the black shank organism (Table 4). In fields infested with both black shank and black root rot, either Burley 49 or Burley 64 should be grown. Burley 64 is a multiple-disease-resistant variety that yields more than Burley 49. However, one should be familiar with recommended management practices for Burley 64 before growing it.

A relatively new virus disease called Tobacco Vein Mottling Virus (TVMV) has been identified in the burley belt. The most conspicuous symptoms on sensitive varieties are severe spotting and disintegration of the leaves. Close examination reveals a green mottle along the small veins of infected plants. No variety is resistant to the virus, but some are less sensitive than others. All of the commonly-grown black shank-resistant varieties except MS Burley 21 x L8 are extreme'y sensitive to TVMV (Table 4).

Tobacco etch (TEV) appeared early in the 1976 growing season and caused considerable damage in east Tennessee. We have no data on tolerance of varieties to TEV. Information from other stations, however, indicate that black shank-resistant varieties are generally more sensitive to the virus than others. If there is no black shank in the community, growers who have experienced problems with viruses may consider growing Ky. 14, Burley 21, or MS Burley 21 x Ky. 10. If a black shank-resistant variety is required, Va. 509 appears to be the least sensitive of the black shank resistant varieties to etch.

Very little virus damage was observed on tobacco in 1977. Future outbreaks of virus diseases depend upon availability of plants which harbor the viruses and the timing of aphid movements to transmit them. Whether or not outbreaks will occur is unpredictable at this time.

Some plant characteristics of the commercial varieties are presented in Table 5. The number and size of leaves, plant height, distance between leaves, and time from transplant to flowering may be considered when selecting a variety for ease of handling. These factors may be important in the choice of a variety depending upon the personal preference of the grower, kind of labor available, and the kind and amount of other resources such as barn space and land that are available.

Table 1. Burley Tobacco: Yield [1] in pounds per acre by varieties, locations, and years

Variety	Greeneville			Springfield			Spring Hill [2]		Variety average
	1974	1975	1976	1974	1975	1976	1974	1975	
Burley 21	2,379	2,271	2,602	2,160	3,397	2,014	1,834	2,793	2,435
Burley 37	2,221	2,093	2,294	2,218	3,074	1,810	1,598	2,782	2,261
Burley 49	2,154	2,021	2,386	2,041	2,966	2,254	1,702	2,665	2,274
Burley 64	2,372	2,116	2,326	2,156	2,997	2,155	1,998	3,137	2,407
Va. 509	2,576	2,337	2,720	2,504	3,399	2,332	2,270	3,228	2,671
Ky. 10	2,546	2,490	2,957	2,434	3,794	2,512	2,214	3,109	2,757
Ky. 14	2,674	2,241	2,949	2,832	3,446	2,476	2,129	3,396	2,768
Hybrid									
MS Burley 21 x Ky. 10	2,785	2,556	2,383	2,726	3,794	2,672	2,334	3,401	2,831
MS Burley 21 x L8	2,366	2,387	2,341	2,334	3,455	2,495	2,170	3,048	2,575
MS Burley 37 x L8	2,418	2,296	2,147	2,399	3,499	2,249	1,595	3,378	2,498
MS Ky. 14 x L8	2,513	2,394	2,626	———	3,712	2,596	———	3,495	———
L.S.D. (0.05)	266	211	304	310	307	275	463	345	
C.V. %	5.6	6.0	8.0	8.9	6.2	8.0	16.0	7.0	

[1] Based on four replications of 100 plants per replication.
[2] 1976 data not available.

Table 2. Burley Tobacco: Market value in dollars per hundred weight [1] by varieties, locations, and years

Variety	Greeneville			Springfield			Spring Hill [2]		Variety average
	1974	1975	1976	1974	1975	1976	1974	1975	
Burley 21	116.70	108.07	112.65	110.13	111.55	111.02	116.34	113.71	112.52
Burley 37	116.43	108.15	111.62	109.55	111.55	111.72	116.27	113.44	112.34
Burley 49	116.63	108.06	111.10	109.70	110.84	112.22	116.14	113.77	112.31
Burley 64	116.54	107.77	112.45	109.50	111.52	111.22	116.03	113.99	112.38
Va. 509	116.48	107.35	112.92	109.47	111.04	111.35	116.07	113.56	112.28
Ky. 10	115.54	109.61	114.47	107.30	112.21	112.55	115.90	113.83	112.68
Ky. 14	115.59	110.00	113.42	108.68	111.60	110.87	116.19	114.12	112.56
Hybrid									
MS Burley 21 x Ky. 10	115.83	109.48	114.60	108.62	112.26	111.57	116.50	113.75	112.83
MS Burley 21 x L8	116.96	109.27	112.82	108.73	112.05	113.35	116.39	113.85	112.93
MS Burley 37 x L8	117.10	108.76	112.60	108.12	110.39	113.47	116.23	113.78	112.56
MS Ky. 14 x L8	116.67	109.67	113.52	———	110.92	112.10	———	113.43	112.72
L.S.D. (0.05)	0.86	1.79	1.51	4.37	1.75	2.07	0.57	0.35	
C.V. %	0.50	1.47	0.92	2.00	1.06	1.28	0.66	0.65	

[1] Dollars per hundredweight were calculated from the average market value of the U.S. Government grades for the given year.

[2] 1976 data not available.

Table 3. Percent of tobacco fitting manufacturer's cigarette grades by varieties, locations, and years

Variety	Greeneville			Springfield		Spring Hill [2]		Variety average
	1974	1975	1976	1975	1976	1974	1975	
Burley 21	90	82	61	73	63	74	88	76
Burley 37	91	77	50	71	52	75	89	72
Burley 49	89	81	41	69	65	74	80	71
Burley 64	90	82	56	73	43	76	77	71
Va. 509	94	80	54	59	34	68	73	66
Ky. 10	89	81	47	75	35	65	83	68
Ky. 14	80	82	74	73	25	73	75	69
Hybrid								
MS Burley 21 x Ky. 10	73	83	64	69	44	75	80	70
MS Burley 21 x L8	87	68	68	75	46	70	71	69
MS Burley 37 x L8	95	79	59	67	40	76	80	71
MS Ky. 14 x L8	97	68	64	75	37	—	69	68

[1] 1974 data not available.
[2] 1976 data not available.

Table 4. Burley Tobacco: Resistance to Black Shank and Black Root Rot and Sensitivity to TVMV

Variety	(Race 0)			Race 0 & 1			Resistance to	Extremely sensitive
	1974	1975	1976	1974	1975	1976	Black Root Rot	to TVMV
Burley 21	0	1	2	0	2	0	low	no
Burley 37	99	80	95	95	97	100	low	yes
Burley 49	99	86	99	97	91	97	high	yes
Burley 64	94	76	98	95	99	92	high	yes
Va. 509	97	41	87	85	89	98	low	yes
Ky. 10	—	0	0	—	—	—	medium	no
Ky. 14	—	0	0	—	0	4	medium	no
Hybrid								
MS Burley 21 x Ky. 10	—	3	5	—	0	—	low	no
MS Burley 21 x L8	83	82	89	0	2	16	medium high	no
MS Burley 37 x L8	97	84	97	53	67	76	medium high	yes
MS Ky. 14 x L8	98	59	87	2	2	17	medium high	no

Table 5. Burley Tobacco: Plant Characteristics—Average of 1974, 1975, and 1976 at Greeneville

Variety	Days to flower	Plant height in.	Number leaves	Leaf internode in.	Largest leaf	
					Length in.	Width in.
Burley 21	73	47.6	18.1	2.61	27.0	12.4
Burley 37	72	44.9	18.3	2.45	26.4	12.6
Burley 49	75	42.2	18.6	2.27	25.5	12.0
Burley 64	81	42.1	19.5	2.16	25.7	12.0
Va. 509	75	45.2	18.2	2.48	28.1	13.2
Ky. 10	75	42.8	18.4	2.31	27.7	12.9
Ky. 14	75	47.1	18.9	2.48	28.0	12.9
Hybrid						
MS Burley 21 x Ky. 10	73	49.0	18.9	2.59	28.0	12.9
MS Burley 21 x L8	67	47.1	17.2	2.74	28.7	12.9
MS Burley 37 x L8	68	43.9	16.9	2.59	28.3	13.2
MS Ky. 14 x L8	70	45.7	17.6	2.67	29.4	13.6

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